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UNITED STATES TARIFF COMMISSION
Washington, D. C.

TRADE AGREEMENT DIGESTS

Volume XIII

MANUFACTURES OF RAYON OR OTHER SYNTHETIC TEXTILE

Prepared by the Tariff Commission for use in connection
with trade agreement negotiations

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List of Volumes in this Series

- Volume I - Chemicals, Oils, and Paints
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RAYON MANUFACTURES

Introduction

This volume contains 20 digests of pertinent information on commodities dutiable under Schedule 13 of the Tariff Act of 1930, which have been listed (up to Nov. 9, 1946) by the Trade Agreements Committee for consideration in the proposed trade agreement negotiations with those foreign countries which have been invited to participate in the so-called "nuclear" group. Similar volumes have been or are being prepared by the Tariff Commission on commodities dutiable under other schedules of the tariff act which have been listed for these negotiations. Those products on the Free List of the tariff act which are subject to import-excise taxes are treated as dutiable commodities and are covered by digests which appear in the volumes for the tariff schedules to which such products are most nearly related. In addition, a special volume will be issued covering all commodities on the Free List, other than those subject to import-excise taxes, which have been listed for the negotiations.

Schedule 13 covers rayon yarn, staple fiber, and nearly all semi-manufactured and manufactured rayon textile products. Rayon items not covered by this schedule include rayon rags and clips, which are dutiable under paragraph 1555, and rayon laces, embroideries, braids, etc., which are dutiable under paragraph 1529.

Data showing total United States production of the commodities covered by Schedule 13 are not available, but it is known that a phenomenal increase has occurred in the past 15 years. This is clearly indicated by statistics of production of rayon filament yarn and staple fiber which show an output of 152 million pounds in 1931, 380 million pounds in 1939, and 792 million pounds in 1945. It is estimated that the value of production of manufactures in which this yarn and staple fiber were used approximated 700 million dollars in 1939. Of this total, rayon wearing apparel is believed to have accounted for about 500 million dollars.

The value of imports dutiable under Schedule 13 amounted to \$10,216,467 (foreign value) in 1939; the annual average for the period 1935-39 was about 6 million dollars. Rayon staple fiber constituted the bulk of the imports, accounting for 88 percent of the total in 1939 and 66 percent of the total for the five-year period ending in 1939; rayon woven fabrics and rayon knit goods were import items of lesser importance. The principal suppliers of rayon yarn and staple fiber in 1939 were the United Kingdom, Italy, France, and Japan. Of the total imports in 1939 of articles manufactured from rayon yarn and staple fiber, France, Japan, and Italy were the principal sources. The duty-paid value of imports of rayon manufactures average less than 2 percent of domestic production, although the ratios vary widely for individual items.

The value of United States exports of rayon manufactures exceeded the foreign value of imports in nearly every year during the decade 1931-40; the annual average for the period 1935-39 was about 10 million dollars. Rayon woven piece goods and rayon wearing apparel were the principal items of export. Cuba, the Union of South Africa, Canada, the United Kingdom, and the Philippine Islands were the principal foreign markets.

The ratio of the duties collected on all imports of commodities in Schedule 13 to the foreign value of such imports was 48 percent in 1935, 43 percent in 1937, and 30 percent in 1939. The decline in the ratio was partly attributable to the reduction in duty in trade agreements, but the ratio was mostly affected by the increase in relative importance of imports of rayon staple fiber, which are subject to a duty of 25 percent ad valorem.

All items in Schedule 13 are listed for consideration in the proposed negotiations. ^{1/}

Explanatory Notes

The digests presented herein have been kept as brief as possible and contain only the data most pertinent for an understanding of the international competitive situation with respect to the various products. It was obviously impractical to include all the facts pertaining to the many commodities listed for consideration. Supplementing the data given in the digests, and available for use in the negotiations, is the extensive information contained in the files of the Commission and its numerous published reports, as well as the knowledge and experience of its staff.

Most of the digests give statistics of United States production, exports, and imports (total and by principal sources) for the three prewar years, 1937, 1938, and 1939 and for one war year, 1943. In the case of some commodities the statistics cover a much longer period. Where statistics of production or of exports of a particular commodity are not available, estimated figures, or some other indication of the relative importance of production and exports as compared with imports are given when possible. Frequently a digest covers more than one statistical import class. In such cases, if the imports are significant, a supplementary table is given, showing for 1939, or some other representative prewar year, statistics of United States imports by individual statistical class, by principal country of origin. Where exports under Lend-Lease are substantial, as well as where imports free for government use or as an act of international courtesy or free under special provisions of the Tariff Act of 1930, are substantial, they are indicated in footnotes to the tables.

Import values are in practically all cases foreign values, i.e., they do not include duties, transportation costs, and certain other charges incident to the shipment of products from the foreign country to the United States. These values, therefore, are not strictly comparable with the values shown for United States production (which are usually the sales value of the product at the plant) or for exports (which represent the actual selling price including inland freight and other charges to the port of exportation).

The countries which are the principal sources of imports are generally listed in the table in the order of the magnitude (by value) of their imports in 1939; and names of the proposed negotiating countries are shown in capital letters.

The digests show for each item the rate of duty provided in the Tariff Act of 1930 and the 1945 (January 1) rate. Changes in the duty since the act of 1930 became effective are shown in detail in footnotes. When it is significant, the ad valorem equivalent (or the specific equivalent) of each rate of duty is given in a general note following the section on tariff rates.

In the case of many of the schedules, rates of duty on certain commodities were reduced by the trade agreements with the United Kingdom and Canada effective January 1, 1939. The economic conditions in these countries and throughout the world were so disturbed in 1939, as the result of preparations for and actual outbreak of war, that the statistics of United States imports for that year cannot be taken as indicating what would have been the effects of these duty reductions under peacetime conditions; the import data for the war years are still less indicative of what would have been those effects.

^{1/} Items which in 1939 accounted for 7 percent of the total value of imports under Schedule 13 were subject to reduced rates of duty provided in trade agreements in effect on April 1, 1945.

RAYON FILAMENTS, SINGLE (ARTIFICIAL HORSEHAIR) OR GROUPED

Stat. import classes (1939): 3800.0, 3800.1, and 3800.2

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--			
			All countries	Switzerland	UNITED KINGDOM	
Quantity (pounds)						
1937 ----	Not avail- able <u>1/</u>	Not avail- able <u>2/</u>	31,333	30,760	N	
1938 ----			21,925	21,120	O	
1939 ----			39,741	39,726	N	
1943 ----			-	-	N	
Value (dollars)						
1937 ----	Not avail- able <u>1/</u>	Not avail- able <u>2/</u>	26,553	26,369	N	
1938 ----			13,826	12,979	O	
1939 ----			24,292	24,284	N	
1943 ----			-	-	E	

1/ Production, consisting almost wholly of grouped filaments for sale is believed to amount to several million pounds.

2/ Exports probably nil or negligible.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1301 Rayon filaments: Single (artificial horsehair):			
Weighing 150 deniers or more. <u>1/</u>	45% but not less than 40¢ lb.	35% but not less than 30¢ lb. <u>2/</u>	UNITED KINGDOM
Weighing less than 150 deniers. <u>1/</u>	50% but not less than 40¢ lb.	35% but not less than 30¢ lb. <u>2/</u>	do.
Grouped (exceeding 30 inches in length):			
Weighing 150 deniers or more. <u>1/</u>	45% but not less than 40¢ lb.	45% but not less than 40¢ lb.	do.
Weighing less than 150 deniers. <u>1/</u>	50% but not less than 40¢ lb.	50% but not less than 40¢ lb.	do.

1/ Per length of 450 meters.

2/ Trade agreement with Switzerland, effective February 1936.

Note.- The duty on total imports in 1939 was equivalent to 49 percent ad valorem.

RAYON FILAMENTS, SINGLE (ARTIFICIAL HORSEHAIR) OR GROUPED--Continued

CommentGeneral

This digest covers single or grouped rayon filaments in continuous lengths without twist. They include (1) artificial horsehair, a coarse, stiff monofilament having a diameter corresponding to natural horsehair, and (2) grouped filaments lying in parallel order and consisting of an aggregation of fine singles identical in size with those which are used for twisting into rayon yarn or cutting into staple fiber. Imports consist almost exclusively of single rayon filaments (artificial horsehair).

Single filaments

Single rayon filaments (artificial horsehair) are used to some extent for brush bristles but their most important use, when in fashion, is in the manufacture of hat braids and millinery all-overs. For millinery purposes they have been virtually displaced in recent years by artificial straw (visca), pedaline, neora, and other novelty hat-braid materials.

Artificial horsehair was formerly manufactured intermittently on a small commercial scale by two or three domestic rayon companies as a side line, but when the milliners' demand declined, production became negligible.

The import trade in artificial horsehair has been extremely irregular. Imports, almost wholly of the 360-denier size, averaged over 300,000 pounds annually in 1929-31 and reached a peak of about 443,000 pounds in 1930. They later declined, and since 1932 only relatively small amounts have been imported. The United Kingdom ranked second as a source of imports before 1932, but was of diminishing importance from then until 1935, when it ceased to be a supplier.

Grouped filaments

Grouped rayon filaments in continuous lengths are produced mainly in the staple-fiber branch of the rayon industry. Producers of rayon yarn, however, also sell grouped filaments without twist to the electrical trade for wire insulation and to throwsters for conversion into crepe and other novelty twisted yarns. The grouped filaments made for sale by rayon yarn producers are essentially the same as the rayon yarn of commerce except for the absence of twist and a difference in put-up.

Grouped filaments made in rayon staple-fiber plants are known technically as "tow." In form, rayon tow resembles a heavy rope without twist. It consists of many tens of thousands of filaments which have been combined together in parallel order from a battery of spinnerets. Rayon tow is the material from which staple fiber is cut, either directly in the producing plant or subsequently after its sale to consuming mills. In the latter establishments, new methods have been devised whereby purchased rayon tow may be broken or cut into the desired staple length without disturbing the parallel alignment of the fibers. By these methods (known as tow-to-top) the staple fiber is prepared directly for spinning without the usual preliminary carding or combing operations. Standard tow of 160,000 deniers (and heavier) has been priced since 1943 at 30 cents per pound.

Rayon tow in continuous form without cutting is used as a packing material in hydraulic stuffing boxes, pumps, presses, accumulators, propeller shafts, and other mechanical equipment operating in water or oil. For this purpose, it is braided, impregnated with lubricants, and packed in flat coils.

Data are not available to show the production for sale either of the no-twist, yarn-type filaments of rayon or of rayon tow. Production of tow for sale to commercial users began only in 1941 and is expected to reach substantial proportions as soon as the revolutionary tow-to-top methods of conversion are perfected.

RAYON FILAMENTS, SINGLE (ARTIFICIAL HORSEHAIR) OR GROUPED--Continued

Grouped filaments are seldom imported and only in negligible quantities, probably for sampling purposes. Less than 200 pounds were obtained in 1935 (from France). In 1936, 1,600 pounds valued at \$381 were obtained from Japan. In both years, imports consisted of grouped filaments weighing less than 150 deniers. No imports occurred in earlier years because rayon tow was not then produced for sale. In later years when tow became, to a small extent, an article of commerce, its importation was prevented by the existence of the minimum specific duty of 40 cents per pound. This duty formerly equaled and, since 1943, has exceeded the price of domestic tow. Moreover, this duty made impossible the importation of tow in competition with imports of cut staple fiber upon which the duty of 25 percent ad valorem has been equivalent to between 4 and 5 cents per pound during the past decade.

RAYON FILAMENT YARNS

Par. No. 1301
UNITED KINGDOM
NETHERLANDS

Stat. import classes (1939): 3801.0, 3801.1, 3801.2, 3801.4, 3801.5, 3801.6, 3801.9, 3802.5, 3802.6, 3802.7, 3802.8

United States production, exports, and imports, 1937-39 and 1943

Year	Production ^{1/}	Domestic exports	Imports for consumption from--				
			All countries	NETHERLANDS	Italy	UNITED KINGDOM	Japan
	Quantity (1,000 pounds)						
1937	321,681	1,282	872	64	506	3	204
1938	<u>2/</u> 257,625	1,353	262	14	131	<u>3/</u>	102
1939	328,625	1,694	176	136	28	5	2
1943	<u>2/</u> 501,125	9,254	5	-	-	1	-
	Value (1,000 dollars)						
1937	204,791	809	335	34	183	3	59
1938	n.a.	764	93	5	53	<u>3/</u>	26
1939	182,348	893	59	39	14	3	1
1943	n.a.	6,920	4	-	-	1	-

^{1/} Single yarns produced in rayon industry only; for production of converted yarns (plied and high-twist) see text.

^{2/} Data from Textile Economics Bureau. ^{3/} Less than 500.

Source: Official statistics of the U. S. Department of Commerce (except as noted).

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1301			
Yarns of rayon or other synthetic textile, singles, *** not specially provided for:			
Weighing 150 deniers or more ^{1/} -----	45% ad val.;) min. 45¢ lb.)		UNITED KINGDOM; NETHERLANDS
Weighing less than 150 deniers ^{1/} -----	50% ad val.;) min. 45¢ lb.)		do.
Yarns of rayon or other synthetic textile, plied ***	50 or 55% ad val.; min. 45¢ lb.)	No change	do.
Any of the foregoing yarns if having more than 20 turns twist per inch -----	45, 50, or 55% ad val.; plus 45¢ lb.; min. 90¢ lb.)		do.
^{1/} Per length of 450 meters.			

Note.- In 1939, the duty on singles was equivalent to 136 percent ad valorem; on plied yarns to 92 percent; and on high-twist yarns (singles and plied combined) to 93 percent. The duty on total imports was equivalent to 134 percent.

RAYON FILAMENT YARNS--Continued

CommentGeneral

By definition in the Tariff Act of 1930, the yarns and filaments covered by paragraph 1301 are restricted to rayon and other synthetic fibers made from cellulose or a compound of cellulose. The paragraph, therefore, does not cover nylon, Vinyon, Saran, and other synthetic fibers derived from organic chemical compounds nor fibers made from protein substances (such as casein) or from glass.

The rayon yarns included under this paragraph are of two general classes:

- (a) Single yarns of standard twist, ^{1/} produced by the rayon industry proper, and
- (b) plied and high-twist yarns advanced from their original form as singles by conversion processes performed by commission throwsters, winders, and yarn dealers, and by textile goods manufacturers. Of the total imports in the prewar decade approximately 97 percent were singles, 2 percent plied, and less than 1 percent high-twist (thrown) yarns.

Rayon yarn, singles

Rayon yarn is the major product of the domestic rayon industry, accounting for 75 to 80 percent of the combined volume of continuous filament yarn and cut filaments (staple fiber). In addition to staple fiber (see digest on par. 1302), certain companies in the rayon industry also make supplemental products from cellulose solutions, such as transparent wrapping material (cellophane), artificial straw, artificial horsehair, viscose sponges, sausage casings, and cellulose bands and bottle seals. The output of these allied products is reported only in value. Of the total output of the rayon industry, valued at 246 million dollars in 1939, rayon yarn accounted for 74 percent, allied products 20 percent, staple fiber 5 percent, and waste 1 percent.

Three methods are in current use for the manufacture of rayon, viz.: the viscose, cuprammonium, and acetate processes. Different chemicals and techniques are employed in each of the three systems, but all are based on the principle of extruding through fine orifices (called spinnerets) a solution prepared chemically from high-grade sulphite wood pulp or purified cotton linters. Viscose yarns, combined with cuprammonium yarns (which are made commercially by but one company) accounted for 70 percent of the total domestic output in 1939; the acetate process accounted for 30 percent.

By whatever method made, rayon yarn is analogous in form to raw silk, inasmuch as it consists of a number of fine continuous filaments, thousands of yards in length, held together by a slight twist rarely exceeding 2 to 5 turns per inch. Like raw silk, it is numbered on the denier system; ^{2/} hence, the coarser or heavier the yarn, the greater is the denier number. Of the total domestic rayon yarn production, between 60 and 70 percent consists of medium and coarse yarns of 150 deniers and over; 30 to 40 percent are fine yarns less than 150 deniers in size.

^{1/} The bulk of the yarns have 2 to 5 turns twist per inch; twist up to 7 turns is occasionally given.

^{2/} The weight in deniers of 5 centigrams each of a length of 450 meters (equivalent to the weight in grams of a length of 9,000 meters).

RAYON FILAMENT YARNS--Continued

Rayon manufacture is a large-scale enterprise requiring heavy plant investment, large working capital, expensive equipment, and extensive laboratory and testing facilities. Production both in the United States and abroad is limited, therefore, to a relatively small number of concerns. Before the war, the bulk of the world's rayon output was controlled by a group of four large companies in Germany, the Netherlands, Italy, and the United Kingdom. These companies had interlocking directorates and close financial connections. The largest American producer was, at that time, a subsidiary of the British company in this group, but this relationship was terminated in 1941, when the British Government transferred the branch in this country to American ownership. The domestic industry is made up of 15 companies operating 28 plants. Three companies, each having an output between 50 and 150 million pounds annually, accounted for 63 percent of the total production of the industry in 1945. Four are affiliated with companies manufacturing chemical products, plastics, and photographic films. Only 2 or 3 rayon producers are engaged in the knitting or weaving of fabrics as an integrated function.

The rayon industry employs between 50 and 55 thousand workers in the manufacture of its entire range of products. The number employed on rayon yarn alone is not reported. The industry has a high ratio of male workers (60 percent). The labor skill requirements are comparatively high, as the production cycle entails an exacting correlation between chemical and mechanical processes to ensure quality yarn. Rayon manufacture is classified as a chemical rather than as a textile industry. Wages of rayon workers are, therefore, higher than wages of textile workers. The average hourly gross earnings (including premium payments for overtime and shift differentials) have exceeded 90 cents since March 1944, and reached 99 cents in December 1945. Excluding premium overtime earnings, the net earnings have been in excess of 85 cents an hour since the beginning of 1944. As reported by the Bureau of the Census, direct labor cost (manufacturing wages) represented in 1939 about 24 percent of the total value of all the products of the rayon industry; other payroll expenditures were 6 percent; materials, supplies, and containers constituted about 29 percent, and fuel and energy 3 percent. Depreciation, obsolescence, and other overhead items together with profit amounted to 38 percent of the total value.

World production of rayon yarn has averaged over a billion pounds annually since 1936. During the interwar period, the United States accounted for 25-35 percent of the world output and was the leading producer except in 1937. Japan ranked first in that year and second throughout most of the decade prior to 1941. Germany and Italy held third and fourth place, respectively. The maximum production of rayon yarn attained by Japan was 336 million pounds in 1937; by Germany, 212 million pounds in 1943; by Italy, 128 million pounds in 1941; by Great Britain, 120 million pounds in 1939; by France, 71 million pounds in 1941; and by the Netherlands, 36 million pounds in 1941. A severe disruption of the rayon industry in most of these countries during the late years of the war caused foreign production in 1944 to decline below the level of 1939. United States production, on the other hand, was 69 percent greater in 1944 than in 1939 and amounted to 555 million pounds or 54 percent of the world total; by 1945 it reached the peak of almost 625 million pounds or 67 percent.

The record high volume of production in the United States during the war was the result of an unprecedented demand for rayon in new markets and channels of consumption. Factors contributing to the expansion were (1) the emergency needs of the military forces for high-tenacity yarn in aircraft and combat-vehicle tires and other war uses; (2) the mandatory export set-asides; and (3) the added demand for rayon to replace the silk and nylon yarns removed from civilian consumption by Government allocation. The most significant wartime development in the rayon industry was the program for expansion of tire yarn capacity. Production of this high-tenacity viscose yarn (chiefly 1,100 deniers) rose from less than 10 million pounds in 1939 to approximately 200 million pounds in 1945. Tire-type yarns constituted in that year about 45 percent of the total viscose yarn output, or 33 percent of the aggregate production of all types of yarn by the rayon industry.

RAYON FILAMENT YARNS--Continued

Imports at their maximum in 1927 and 1929 amounted to more than 15 million pounds, and were 17 and 11 percent, respectively, of domestic consumption. Since 1931, they have averaged less than half a million pounds annually and have constituted only a small fraction of 1 percent of consumption. The bulk of the imports under the Tariff Act of 1930 (over 90 percent) have entered at the minimum specific duty of 45 cents a pound. This minimum is identical with the basic duty on single yarns of rayon under the act of 1922. However, because of the sharp decline in rayon prices which has occurred in the past 15 years throughout the world, the minimum specific duty in the act of 1930 became highly restrictive. It has represented a rising percentage of the foreign value of the imports and has greatly exceeded the margin between the price of representative grades of rayon yarn in this country and in most foreign markets.

Under the Tariff Act of 1930 to the end of 1935, imports were largely high-quality, fine-sized yarns (less than 150 deniers) from Germany and France on which the duty averaged 63 percent ad valorem. From 1936 to 1940, Japan, Italy, and the Netherlands became the chief suppliers of the yarn, most of which consisted of 150 deniers and over. The average price of the imports during this period was about 37 cents a pound, or only half as great as in the early and middle thirties. The equivalent of the specific duty on these low-priced imports, therefore, approximately doubled and averaged over 120 percent ad valorem.

Imports consist almost wholly of single yarns made by the viscose process. Formerly a considerable proportion consisted of low-luster, fine denier yarns and specialties such as the hollow-filament type, for which the limited demand did not justify manufacture by the domestic industry. After the middle thirties, imports consisted largely of medium-size and coarse yarns (150 deniers and over) similar to the standard domestic yarns in luster, finish, and put-up, but not fully comparable in regularity and other characteristics of quality. During the period 1936-39, the average value per pound of the yarn imported into the United States from Italy and the Netherlands was sometimes less than the average for the total rayon yarn exports of these countries to all markets. Some of the imports of rayon yarn have been for manufacture into goods for export, with a drawback of the import duty paid. Imports of rayon yarn by size groups and type for 1939 are shown in the table below.

During the decade before the war, average annual United States exports of rayon yarns were approximately three times as large as imports, but, nevertheless, amounted to less than 1 percent of production. The prewar export trade of the United States was insignificant as compared with that of Italy and Japan, each of which exported (to all countries) over 56 million pounds in 1937. In that year the Netherlands exported 18 million pounds and Germany and the United Kingdom each 14 million pounds. In the war period, exports of the United States were substantially increased as a result of a Government directive which required domestic rayon producers to set aside 4 percent of their output for export under the lend-lease, foreign relief and rehabilitation and Latin American good-neighbor programs. In 1944 United States rayon exports rose to 18 million pounds. After the end of the war, when export set-asides were no longer mandatory, nearly all of the domestic producers curtailed foreign shipments, but, notwithstanding the reduction, total exports in 1945 exceeded 17 million pounds. The market for exports from the United States will be limited on a long-term basis by competition from Great Britain and certain other European countries, and also by the establishment of rayon producing facilities now under way in former importing countries, notably Mexico, Cuba, Peru, and Australia.

The prewar domestic consumption of rayon yarn was approximately the same as production (except for changes in stock position). In 1939, about 75 percent of the rayon yarn shipments from producing plants went into the manufacture of broad-woven textiles, chiefly for women's apparel, linings, and household fabrics. The knit-goods industry (at that time principally seamless hosiery and circular-knit fabrics) consumed 13 percent and miscellaneous textile users, 2 percent. Industrial uses for rayon were then relatively small, only 2 percent going into the tire industry. The principal feature of the consumption pattern in 1945 was the large increase in the use of rayon tire-yarn and the decline in the proportion of textile-type yarns going into broad goods manufacture, which fell to 49 percent. However,

RAYON FILAMENT YARNS--Continued

because of the over-all expansion of rayon yarn production, the quantity consumed in broad goods manufacture was actually about 10 percent greater in 1945 than in 1939. In the knit-goods industry, consumption shifted from seamless to full-fashioned hosiery and expanded considerably in the warp-knit fabric branch.

Although the consumption of rayon tire-yarn for military uses will be reduced as a result of the termination of the war, nevertheless the industrial demand for this yarn is expected to continue on a large scale. A greater volume of textile-type yarns of intermediate tenacity will also be produced, which will increase consumption in the apparel field. To meet the anticipated future demand, the rayon industry is planning an expansion of production within a decade to 800-900 million pounds annually.

In the past 25 years, rayon price movements have been almost continuously downward as a result of competition in the domestic industry, higher manufacturing efficiency, and technological advances. Domestic viscose rayon yarn of 150 deniers declined from an average of \$1.50 a pound in 1928 to 52 cents in 1938. In the same period 100 denier yarn fell from \$2.15 to 69 cents and 75 denier from \$2.55 to 75 cents. Prices in early 1946 (effective since June 1942) were as follows: 300 deniers, 49 cents; 200 deniers, 52 cents; 150 deniers, 55 cents; 125 deniers, 66 cents; 100 deniers, 73 cents; 75 deniers, 85 cents; and 50 deniers, \$1.05. In 1939 about 50 percent of the domestic output of rayon yarn (all processes) consisted of 150 denier yarns; 18 percent, 100 deniers; 15 percent, 75 deniers; 13 percent, 200 and 300 deniers combined; and 2 percent, 120-125 deniers. In order for imported single yarns to compete with domestic yarns at these prices over a minimum specific duty of 45 cents a pound, it would be necessary for foreign suppliers to accept prices ranging from about 4 cents a pound for 300 deniers to about 60 cents for 50 denier yarns. Obviously, the minimum specific duty virtually precludes any imports except of yarns in the extremely fine size range (50 deniers and finer) and specialties such as dyed yarns, Schiffli twists, and certain types of thrown yarns having less than 20 turns twist per inch, which are not subject to the additional differential duty.

If a duty reduction of 50 percent should be made, the minimum specific duty would continue to apply to imports of all single yarns finer than 150 deniers except those valued over 90 cents a pound. It would likewise apply to imports of all single yarns not finer than 150 deniers, except those valued over \$1.00 a pound. Should foreign values be higher than these amounts, the basic ad valorem duties of 22½ percent or 25 percent would be applied, depending on the size category in which the yarns are classified. As nearly all rayon yarns except specialties are valued in foreign countries at less than 90 cents a pound under normal conditions of exchange, the bulk of the imports would probably be subject to the specific minimum of 22½ cents a pound.

In order for imported rayon yarns to sell in the United States, over a minimum duty of 22½ cents a pound, at prices substantially equal to the present prices of domestic yarns of comparable size, the fine yarns such as 125, 100, 75, 65, and 50 deniers would have to have a foreign value ranging, according to denier, from 40 to 80 cents a pound. At these foreign values, the specific minimum duty of 22½ cents a pound would be equivalent to 28 percent ad valorem on the extremely fine 50 denier yarn and would rise progressively to 55 percent for 125 denier yarn.

Similarly, the foreign values of imported yarns in the medium and coarse size category would have to range from 24 cents for 300 denier yarn to 30 cents for 150 denier yarn. The minimum specific duty on this size group would then be equivalent to from 95 percent ad valorem on 300 denier yarn to 75 percent on 150 denier yarn. These prices are undoubtedly below the actual present prevailing level of prices abroad.

RAYON FILAMENT YARNS--Continued

of imports

Germany will cease to be a source inasmuch as the Allied Powers are giving no encouragement to the rehabilitation of the rayon yarn industry in occupied countries beyond that necessary to maintain their own domestic requirements. The production of surplus rayon yarn for export is not likely to be permitted by reason of the fact that the rayon industry consumes large quantities of coal and by the further fact that it can be readily converted to the manufacture of war potentials such as essential industrial chemicals, tire cord for combat vehicles and other military goods. Plans, on the other hand, are being made to reactivate cotton manufacturing in these countries as a civilian industry adapted for a normal nonmilitary economy. The limitation of rayon production to the minimum domestic needs of the occupied countries may add surplus rayon machinery to the Allies' reparations account. Reparation claims for rayon equipment would have the effect of increasing the capacity of the rayon industry in France, Russia, and the United Kingdom. In such a case, competition of rayon yarn from these countries in the domestic market might be strengthened. In all probability, the United Kingdom alone will be in a position in the near future to resume exports to this country. However, as British rayon is generally higher in price than domestic rayon, the United Kingdom may be at a competitive disadvantage on the American market, except, perhaps, in the sale of fine-size yarns which may be in short supply here.

Plied and high-twist (thrown) rayon yarns

In the manufacture of full-fashioned hosiery and certain classes of woven fabrics such as chiffons, georgettes, voiles, crepes, romaines, alpacas, and other specialties, rayon yarn must be advanced from its original form as purchased in order to produce the effect desired in the intended constructions and to enhance its strength for knitting and weaving operations. These additional processes (covered by the term "converting") involve mainly doubling and twisting (throwing). Doubling is the operation of twisting two or more singles together into a ply yarn or of twisting a number of ends of ply yarn into a cable yarn. Throwing is the process of imparting further twist to yarns either in the single or plied condition. Most thrown rayon yarns are singles except certain fancy combination yarns made by plying acetate yarns with high-twisted viscose yarns. Some thrown yarns such as warp twists, hosiery trams, Schiffli twists and some low-twist voile yarns contain less than 20 turns twist per inch. The bulk of the voile yarns and all crepe yarns and novelty combination yarns, however, contain more than this number of turns.

The operations of doubling and twisting are performed largely by integrated weaving and knitting mills converting yarns for their own use, and to a lesser extent by commission throwsters, and by jobbers and dealers engaging contractors.

The total domestic production of plied and thrown rayon yarn amounted in 1939 to over 71 million pounds of which 72 percent was processed by textile mills for their own consumption, and 21 percent by commission throwsters. Thrown yarns made for sale were only 7 percent of the total and amounted to 5,242,000 pounds, valued at \$3,811,000. The average value of the "sale" yarns thrown in that year was 73 cents a pound as compared with an average value of 56 cents a pound for the yarns made by the primary rayon producers. Thus, the differential for the doubling and throwing operations averaged 17 cents a pound, but the charges for converting may range from 15 cents to more than 50 cents a pound, depending on the denier of the yarn, the number of turns twist, and the form of put-up.

RAYON FILAMENT YARNS--Continued

Imports of ply yarns (having less than 20 turns twist per inch) amounted to 502,000 pounds at their peak in 1927. The maximum under the Tariff Act of 1930 was 38,000 pounds in 1931 (largely from Italy); in the subsequent decade they averaged less than 6,000 pounds annually and were supplied mainly by Germany and Switzerland.

The Tariff Act of 1930 provides a differential of 5 percent ad valorem for the additional conversion operations applied to ply yarns. Actually, the protection afforded by this differential is considerably less than the conversion cost. Inasmuch as the minimum rate is exactly the same for ply yarns as for singles, the increment for the plying process is eliminated altogether when the price of plied yarn is sufficiently low to make the minimum specific duty apply. It becomes effective on ply yarns of 150 denier or over having a foreign value not exceeding 90 cents a pound and on ply yarns finer than 150 deniers having a foreign value not over 82 cents a pound. Under the act of 1930 imports of ply yarns have averaged about 64 cents a pound in foreign value. About 83 percent of the imports of ply yarns during the thirties were dutiable at the minimum specific rate. Under a maximum reduction of the basic duty on ply yarns to 25 percent and 27½ percent ad valorem (depending on size category), the bulk of the imports would probably continue to be dutiable at the minimum specific rate (if reduced to 22½ cents a pound).

Imports of thrown yarns having more than 20 turns twist per inch are almost wholly from France and usually amount to less than 1,000 pounds a year. Thrown yarns take a compound duty consisting of the basic ad valorem rates (45, 50 or 55 percent) and a specific differential of 45 cents a pound for the additional conversion operation. The minimum specific rate of 90 cents a pound has seldom been applied inasmuch as the imports in most years have averaged over \$1.25 a pound. As most weavers and knitters in this country prefer to throw their own yarns or to have them thrown on contract according to their own specifications, imports of thrown yarn (whether of silk or rayon) are usually negligible.

RAYON FILAMENT YARNS--Continued

Rayon filament yarns: United States imports for consumption, by kinds, with principal sources, 1939

Kind	Total value	Principal sources
Yarns having not over 20 turns twist per inch:		
Singles, weighing $\frac{1}{2}$ ---		
150 deniers or more -----	\$39,150	NETHERLANDS, \$36,045; UNITED KINGDOM, \$2,857
Less than 150 deniers---		
120 deniers -----	725	Italy, \$646; UNITED KINGDOM, none; NETHERLANDS, none
100 deniers -----	15,870	Italy, \$10,297; NETHERLANDS, \$3,156; UNITED KINGDOM, none
75 deniers -----	131	NETHERLANDS, \$131
Other -----	732	Italy, \$646; UNITED KINGDOM, none; NETHERLANDS, none
Plied, weighing---		
150 deniers or more -----	-	
Less than 150 deniers -----	2,763	Italy, \$2,613; UNITED KINGDOM, none; NETHERLANDS, none
Yarns having over 20 turns twist per inch:		
Singles, weighing---		
150 deniers or more -----	15	France, \$15
Less than 150 deniers -----	-	
Plied, weighing---		
150 deniers or more -----	-	
Less than 150 deniers -----	27	France, \$27

$\frac{1}{2}$ Per length of 450 meters.

Source: Official statistics of the U. S. Department of Commerce.

Compensatory Duties on Rayon Yarn Manufactures

In seven paragraphs of the rayon schedule, covering manufactures of rayon yarn (paragraphs 1306-1312, inclusive), there are compound rates of duty, the specific elements of which are intended to be compensatory for the duty on rayon yarn. In six of these paragraphs, the specific rate is fixed at 45 cents a pound. In paragraph 1307 (rayon pile fabrics), the 45-cent specific rate was reduced, in the trade agreement with France, effective June 1936, to 25 cents in recognition of the utilization of other fibers in conjunction with rayon yarn in the construction of the pile fabrics dutiable under this paragraph. Inasmuch as the domestic price of rayon yarn has fallen greatly since the enactment of the Tariff Act of 1930, the specific part of the duty on rayon manufactures now supplies a considerable margin of protection in addition to that provided by the ad valorem duty. The average difference between the price of the yarn in the United States and abroad in 1939 was in the neighborhood of 20 cents a pound. The specific portion of the compound duty tends to confine the imports to relatively high-priced goods; if goods of grades corresponding to the bulk of the domestic production were imported, the ad valorem equivalent of the compound duty would be materially higher than that based on actual imports.

RAYON WASTE (EXCEPT CELLULOSE ACETATE)

BELGIUM

(See digest on rayon filament yarn (par. 1301) and spun rayon yarn (par. 1303))

Stat. import class (1939): 3805.0

United States production, exports, and imports, 1937-39 and 1943

Year	Production ^{1/}	Domestic exports	Imports for consumption from--				
			All countries	BELGIUM	Netherlands	Japan	United Kingdom
Quantity (1,000 pounds)							
1937	11,185	Not avail- able	13,353	506	345	11,662	482
1938	2/ 8,000		842	60	52	319	75
1939	12,600		1,619	556	459	194	145
1943	2/ 15,000		3/ 592	-	-	-	-
Value (1,000 dollars)							
1937	1,117	Not avail- able	1,273	56	40	1,091	47
1938	n.a.		80	6	8	30	8
1939	1,465		185	66	56	25	15
1943	n.a.		3/ 68	-	-	-	-

^{1/} Rayon producers' waste only; data not available for output of textile mill waste of rayon (see text). ^{2/} Estimated. ^{3/} All from Canada.

Source: Official statistics of the U. S. Department of Commerce (except as noted).

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
	Percent ad valorem		
Par. 1302			
Rayon waste (except cellulose acetate) -----	10	10	BELGIUM

Comment

The rayon waste provided for under paragraph 1301 consists mainly of damaged filaments (without twist) and imperfect yarns discarded in plants producing rayon yarn and staple fiber by the viscose and cuprammonium processes. Such waste is known as "producers' waste." Also included are snarled and short lengths of rayon yarn incident to the operations of winding, throwing, knitting, weaving, and dyeing in textile mills. Excluded are used rags and clips of rayon which are dutiable at 7½ percent ad valorem under paragraph 1555 of the Tariff Act of 1930 as modified under the trade agreement with the United Kingdom.

Rayon waste is used for the most part as a blending medium with wool to reduce costs and to obtain novelty effects in style goods. Rayon producers' waste is processed into spinnable fibers by carding and combing; textile mill thread waste of rayon, however, because of its generally hard character, requires garnetting before being reworked. After being reduced to a fibrous state, rayon producers' waste is blended with wool in the spinning of yarns on the woolen, worsted, or spun silk systems. Textile mill thread waste of rayon, on the other hand, after garnetting, is suitable only for blending with wool and other fibers in yarns spun on the woolen system. Highly creped thread waste, which does not garnett satisfactorily, is used largely for journal box packing and as stuffing material in the manufacture of mattresses, dolls, indoor baseballs, and other articles.

RAYON WASTE (EXCEPT CELLULOSE ACETATE)-Continued

The domestic output of rayon producers' waste amounts to between 4 and 5 percent of the total volume of yarns and staple fiber made outside the acetate branch of the rayon industry. The production of textile mill thread waste of the types usable for garnetting into spinnable fiber is estimated at less than 3 percent of the total annual consumption of nonacetate rayon yarn for textile purposes and in the period 1937-43 amounted probably to between 5 and 10 million pounds per year.

Consumption of rayon waste fluctuates with (1) the activity in the wool manufacturing industry, (2) style trends, (3) the level of raw wool prices, and (4) the relation of the price of rayon waste to that of other wool blending materials such as rayon staple fiber, wool noils, wool waste, reprocessed wool waste, cotton waste, rayon clips, and rags.

Imports, which consist mainly of rayon producers' waste, averaged 3,660,000 pounds under the Tariff Act of 1922 and about 2,000,000 pounds annually during 1931-35. The rise in wool prices caused imports of rayon waste to increase to 9,475,000 pounds in 1936 and to a peak of 13,353,000 pounds in 1937, but in the next 2 years, when wool prices receded, imports of waste were at a much lower level.

The source of imports has been variable. The principal supplies have characteristically been received from countries where rayon production was undergoing rapid expansion, and where for that reason a relatively large proportion of off-grade material was obtained. Germany was the chief source in 1931 and 1932, Italy in 1933, and Japan from 1934 to 1938. The exports from Japan contracted sharply in 1938, and that country was superseded in the following year by Belgium and the Netherlands as principal suppliers.

With high wool prices and a high level of activity in the manufacture of woollen and worsted goods, as seems likely, United States consumption of rayon producers' waste in the early postwar years will in all probability exceed that of 1939. Imports will probably be small, however, because foreign countries will have little or no rayon waste in excess of their current needs.

RAYON NOILS; GARNETTED OR CARDED RAYON; AND RAYON SLIVER, TOPS, AND ROVING

Stat. import classes (1939): 3805.1, 3805.2, and 3810.1

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--				
			All countries	BELGIUM	Switzer-land	United Kingdom	Germany ^{1/}
	Quantity (pounds)						
1937	Not avail- able ^{2/}	Not avail- able ^{3/}	^{4/} 44,201	-	57	19,959	445
1938			27,166	21,127	218	-	287
1939			^{5/} 47,490	42,707	1,088	2,586	675
1943			-	-	-	-	-
	Value (dollars)						
1937	Not avail- able ^{2/}	Not avail- able ^{3/}	^{4/} 7,222	-	24	2,227	259
1938			5,373	3,296	56	-	146
1939			^{5/} 8,022	6,840	441	284	271
1943			-	-	-	-	-

^{1/} Includes Austria beginning 1938.

^{2/} Known to be many times larger than imports (see text).

^{3/} Probably small.

^{4/} Includes 19,380 pounds valued at \$3,029 imported from Japan.

^{5/} Includes 338 pounds valued at \$162 imported from FRANCE. No imports from FRANCE, 1937-38.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1302			
Noils of rayon or other synthetic textile -----	25% ad val.	25% ad val.	BELGIUM
Garnetted or carded rayon or other synthetic textile -----	10¢ per lb.+ 25% ad val.	10¢ per lb.+ 25% ad val.	do.
Sliver, tops, and roving, of rayon or other synthetic textile	10¢ per lb. + 30% ad val.	10¢ per lb.+ 30% ad val.	FRANCE

Note.- There were no imports of garnetted or carded rayon in 1939. The compound duty on imports of sliver, tops, and roving of rayon in 1939 was equivalent to 54 percent ad valorem or to 22 cents a pound.

Comment

Noils are fibers of less than required length removed in the worsted combing process. Noilage is obtained in the combing of both rayon staple fiber and rayon waste, but only from the waste is the quantity considerable. Essentially a by-product too short for further use in worsted spinning, rayon noils are purchased by woolen mills for blending with wool or wool noils.

RAYON NOILS; GARNETTED OR CARDED RAYON; AND RAYON SLIVER, TOPS, AND ROVING--Con.

Garnetted rayon consists of a soft tissue-thin lap of broken, short-length fibers obtained by processing hard-twisted producers' and converters' thread waste, fabric ends, tailors' clippings, rags, and old garments. Woolen yarn spinners use garnetted rayon waste as a cheapening agent to blend with wool and other fiber stock for the production of low-grade woolen yarns designed for inexpensive suitings, mackinaw cloth, overcoating, and blanketing fabrics.

Carded rayon is composed of a thin, clean, tissue-like web of fibers obtained as the result of opening up, separating, blending, and straightening out short-length rayon fibers by the action of the revolving wire-covered cylinders of the card. Nearly all of the short-length rayon which has been processed on any of the various types of carding machines is directly condensed and drawn off the card in the form of a continuous strand of fibers loosely compressed together without twist, known as sliver. Rayon sliver from cotton or worsted cards must undergo a number of additional processes before being in a condition to spin, whereas rayon sliver from woolen cards is ready for spinning into yarn without further processing. Rayon sliver is rarely sold as such but is utilized in the producing mill in the continuous sequence of operations leading up to the production of spun-rayon or mixture yarns.

Rayon tops are combed sliver from which the shorter fibers (noils) have been removed by the worsted combing process. The sequence of operations in the manufacture of rayon tops is substantially the same as for wool tops, and the equipment used is the same except for minor adjustments necessitated by the special properties of the rayon fiber. Rayon tops are used principally for blending with cotton or wool in the production of mixture yarns.

In most textile spinning systems, sliver is converted into roving by the insertion of a small amount of twist, and roving is converted into yarn by the insertion of the full amount of twist required. In woolen manufacturing, however, the card sliver goes direct to the spinning frame and for this reason is usually known by the misleading term "roving". Very little roving of any kind enters into commercial transactions.

Of the noils obtained in processing open rayon waste and staple fiber into tops in 1937, the last year for which such data are available, 504,000 pounds were made on commission, 266,000 pounds for sale, and 141,000 pounds for consumption within the producing mills.

Garnetted rayon is produced for sale by wool shoddy manufacturers who conduct a specialized business in the reclaiming of fiber from textile wastes and rags of all kinds. Woolen yarn manufacturers as a rule purchase garnetted wastes or have the garnetting performed on commission as garnetting machines are not only an expensive investment but ponderous and space-consuming. Garnetted rayon production statistics are not available, but it is estimated that from 20 to 25 million pounds of rayon stock were available for processing into spinnable fiber for woolen mills in 1945.

No data are available for the production of carded rayon, sliver, and roving made from short-length rayon fiber as these semiprocessed articles are generally utilized in the mills where produced and seldom enter trade channels.

The production of rayon tops (combed sliver) has become a specialty. A large part of the business is conducted by commission top-makers concentrated in the vicinity of Boston, who comb for the account of worsted yarn spinners, or for top dealers who provide them with the material to be combed. Rayon tops are also made by large combers in the Philadelphia area who process their own fibers and sell the finished tops. In 1937, the first year for which production data are available, rayon tops made on commission amounted to 6,082,000 pounds; the production for sale amounted to 700,000 pounds, while that for the use of the mills in which it was produced amounted to 4,235,000 pounds. The figures for 1939 were 3,726,000 pounds, 348,000 pounds, and 860,000 pounds, respectively. Preliminary consumption statistics for 1945 indicate a total rayon top production of about $5\frac{1}{2}$ million pounds in that year.

RAYON NOILS; GARNETTED OR CARDED RAYON; AND RAYON SLIVER, TOPS, AND ROVING--Con.

United States imports of rayon noils reached a maximum of 239,000 pounds valued at \$31,000 in 1936, decreased substantially in the years 1937-40, and ceased in 1941. Garnetted and carded rayon were first recorded separately in import statistics in June 1930. Since that time, however, there have been no imports of these articles. Imports under the classification "sliver, tops, and roving of rayon" have consisted almost wholly of tops, and have exceeded 10,000 pounds in only one year (1935) since 1930. Total imports under the classifications here considered for the decade 1931-40 amounted to 636,000 pounds. Of this total Germany supplied 53 percent, the United Kingdom 18 percent, and Belgium 11 percent.

The specific element (10 cents per pound) in the compound duty in paragraph 1302 on the semimanufactured rayon fibers was in theory designed to compensate the domestic manufacturer for the increased price of imported staple fiber by reason of the duty on such fiber. When the compensatory duty of 10 cents a pound was being considered during the tariff legislation of 1930, it then bore a definite relationship to the proposed duty of 25 percent on staple fiber, but with the decline in the price of staple fiber in recent years the specific equivalent of the ad valorem rate (25 percent) on staple fiber has shown a corresponding decrease and in the 5-year period 1937-41 averaged a little less than 5 cents a pound. The foreign value per pound of imported staple fiber averaged about 43 cents at the time of the enactment of the Tariff Act of 1930, but averaged only 19 cents for the period 1937-41. In the case, therefore, of semimanufactured rayon processed from staple fiber, such as carded rayon, sliver, tops, and roving, the compensatory duty (10 cents per pound) now provides, under changed price relationships, more than the amount necessary to reimburse the manufacturer for the duty on the raw material. When these products are made from rayon waste (dutiabale under paragraph 1302 at 10 percent ad valorem) the disparity in the compensatory duty is even larger.

The compensatory duty of 10 cents a pound as applied to garnetted rayon is also high when related to the actual duty on the material from which it can be made. Garnetting is a process applied only to clips, rags, and hard-thread waste, which are considerably lower in value and quality than the open rayon waste suitable for top making. The duty on imports of rayon rags and clips suitable only for garnetting, which was reduced in 1939 from 10 percent to $7\frac{1}{2}$ percent ad valorem under the trade agreement with the United Kingdom, averaged about one-half cent a pound in the period 1937-41.

RAYON NOILS; GARNETTED OR CARDED RAYON; AND RAYON SLIVER, TOPS, AND ROVING-Con.

Rayon noils; garnetted or carded rayon; and rayon sliver, tops, and roving:
United States imports for consumption, by kinds, with principal sources, 1939

Kind	: Total : value	: Principal sources
Rayon noils -----	: \$7,124	: BELGIUM, \$6,840
Garnetted or carded rayon -----	: none	:
Rayon sliver, tops, and roving ---	: 898	: Switzerland, \$441; Germany, \$271;
	:	: FRANCE, \$162
	:	:

Source: Official statistics of the U. S. Department of Commerce.

RAYON STAPLE FIBER

[See digests on grouped filaments (Par. 1301) and spun-rayon yarn (Par. 1303)]

Stat. import class (1939): 3310.0

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from---				
			All countries	UNITED KINGDOM	Italy	France	Japan
Quantity (1,000 rounds)							
1937	20,244	Not	20,607	3,094	5,627	34	11,639
1938	<u>1/</u> 29,860	avail-	23,189	12,033	9,908	208	426
1939	51,315		47,400	27,602	9,481	4,923	2,855
1943	<u>1/</u> 152,520	able	1	-	-	-	1
Value (1,000 dollars)							
1937	6,177	Not	3,347	699	1,092	7	2,001
1938	n.a.	avail-	4,609	2,438	1,240	30	85
1939	13,519		9,016	5,258	1,921	798	445
1943	n.a.	able	<u>2/</u>	-	-	-	<u>2/</u>

1/ Data from Textile Economics Bureau (New York).

2/ Less than \$500.

Source: Official statistics of the U. S. Department of Commerce (except where noted).

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
	Percent ad valorem		

Paragraph 1302

Filaments of rayon or other synthetic textile not exceeding thirty inches in length, other than waste, whether known as cut fiber, staple fiber, or by any other name -----

25

25

UNITED KINGDOM

Note.- The specific equivalent of the duty on total imports in 1939 was 4.8 cent a pound.

Comment

Imports of rayon staple fiber in 1939 constituted 83 percent of the aggregate value of all imports under Schedule 13 of the tariff act.

Rayon staple fiber consists of spinnable filaments of short staple, usually ranging in length from 1 to 8 inches. It is made by cutting rayon tow, a heavy rope-like mass of many thousands of parallel filaments grouped together without twist. (See Par. 1301.) Rayon tow can be cut into any desired length for processing on any system of yarn spinning. In the United States the bulk of the staple fiber is consumed by the cotton industry in the manufacture of so-called "spun-rayon yarn" (see Par. 1303). It is also blended with cotton, wool, combed waste silk, or other textile fibers for the manufacture of novelty yarns. Yarns spun wholly or partly from staple fiber are used in the manufacture of apparel fabrics, handkerchief cloth, knit goods, blankets, upholstery and drapery fabrics, tablecloths, carpets, and other articles for house furnishing.

RAYON STAPLE FIBER--Continued

Staple fiber is a comparatively new product, the manufacture of which began commercially in the late twenties. It is made from a cellulose solution substantially identical with that prepared for rayon yarn. Simplified techniques and special devices are, however, employed in the extrusion, collection and treatment of the filaments intended for cutting into staple fiber. The cost of producing staple fiber by the viscose process (which accounts for 75 to 80 percent of the domestic output) is less than that of viscose rayon yarn. Lower costs result from (1) less rigid requirements for quality control, (2) the high-speed extrusion of the filaments through very large spinneret nozzles each having several thousand apertures, (3) the collection of the extruded filaments in bulk from a battery of spinnerets rather than from the individual spinneret as in the case of rayon yarn, and (4) the elimination of winding, twisting, sorting, grading, and packaging operations.

World production of rayon staple fiber (estimated) increased from about 6 million pounds in 1930 to 1,147 million pounds in 1939 and to 1,563 million pounds at its maximum in 1941. The world output exceeded that of rayon yarn in the 5-year period 1940-44. Germany, Italy, and Japan were the main producers in the prewar period, having begun intensive production in the middle thirties to lessen their dependence on foreign sources for cotton and wool. These countries usually produce much more rayon staple fiber than rayon yarn. The maximum output of staple fiber (Zellwolle) attained in Germany was 705 million pounds in 1942; in Italy, 292 million pounds in 1941; and in Japan 327 million pounds in 1938. This compares with an estimated production in 1945 in Germany of 200 million pounds; in Italy of 3 million pounds; and in Japan of 22 million pounds. These three countries accounted for nearly 90 percent of the world output in 1939 but the proportion declined to 38 percent in 1945. Production in the United Kingdom was about 60 million pounds in 1939, declined somewhat in the next few years, and in 1945 amounted to 55 million pounds.

The United States, which ranked fifth as a producer and accounted for less than 5 percent of the total world output of staple fiber in 1939, has advanced to second place and in 1945 produced 28 percent of the world total. The domestic output increased from less than 5 million pounds in 1935 to more than 50 million pounds in 1939; by 1944 it reached 169 million pounds. Production remained stationary in 1945 inasmuch as a substantial portion of the staple-fiber capacity of the largest producer was then converted under Government directives to the manufacture of high-tenacity rayon yarn required for tire cord and other military uses. The increased raw material requirements for the rayon yarn industry, arising from the huge expansion of its tire yarn facilities, were an additional factor which retarded the growth of staple fiber production during 1945. Staple fiber constitutes (in weight) between 20 and 25 percent of the aggregate output of the domestic rayon industry. Four companies primarily engaged in making rayon yarn account for the entire output of staple fiber, eight plants employing between 2,000 and 2,500 workers being used for this purpose.

Imports of rayon staple fiber averaged 42 percent of the total United States supply from 1930 to 1935. In the following four years when both imports and production increased over ten-fold, nearly half of the domestic consumption was supplied by imports. At their peak in 1939, imports amounted to over 47 million pounds but declined by 1941 to 12 million pounds or slightly less than 10 percent of the domestic consumption. After April 1942, the negligible imports consisted wholly of stocks withdrawn from bonded warehouses. Imports in years earlier than 1935 came principally from Germany and Italy; during 1935-37 from Japan, and during 1938-41 from the United Kingdom. Imports from Japan, which averaged about 16 cents per pound (foreign value), consisted mainly of low-quality staple fiber in sizes and lengths suitable for the woolen and worsted industry; this material therefore offered only indirect competition with the domestic output, the bulk of which, because of its high quality, was used by the cotton industry. Imports from the United Kingdom consisted of staple fiber transferred by the leading British rayon producer to the account of a United States rayon company (at that time its subsidiary) whose capacity then was inadequate for the growing domestic demand.

RAYON STAPLE FIBER--Continued

Exports of staple fiber, not separately recorded, are believed to have been negligible prior to 1943. In 1944 producers were required by the WPB to set aside 4 percent of their output for export under priority ratings to South American countries having spinning facilities. It is not likely that exports to these markets will be maintained after Great Britain and other large foreign producers are again in a position to export.

A large expansion of the domestic consumption of rayon staple fiber is foreseen in the long-term postwar period (say, the first half of the 1950 decade). The price stability of staple fiber is one of the main factors contributing to the growth in its use. The price of staple fiber has remained steadily at 24-25 cents a pound since 1938. The price of raw cotton advanced from approximately 9 cents a pound in 1938 to over 30 cents in 1946; and domestic raw wool advanced from 69 cents to 99 cents (C.C.C. selling price). As staple fiber requires no cleaning operations and has an extremely low waste ratio in processing, its price on the basis of realizable fiber is now considerably below the price of raw cotton.

At the present time the demand in this country for staple fiber exceeds the available supply. If cotton and wool prices remain high and textile mill activity is maintained at its present high level, staple fiber will continue to be in short supply until an increase in productive capacity is effected. Current plans for plant expansion, if carried out, will bring the capacity of the domestic rayon staple fiber industry to about 300 million pounds within two or three years. Depending on per capita income and the prevailing rate of duty, the domestic plant capacity may within a decade be raised to 500 million pounds.

Imports during the first 5 months of 1946 amounted to nearly 10 million pounds valued at almost 3 million dollars. Since the revival of the trade in December 1945, Sweden has been the main source of staple fiber imports. The United Kingdom will continue to be an important supplier, but its exports to the United States are not likely to be so large as before the war in view of the anticipated increase in demand from Empire areas and the probable expansion in the United Kingdom of consumption of staple fiber for manufacture of spun rayon fabrics for domestic needs and exports.

SPUN RAYON

(See digests on rayon waste and rayon-staple fiber (par. 1302))

Stat. import classes (1939): 3812.0 and 3812.1

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from—				
			All countries	FRANCE	Japan	Germany ^{1/}	
Quantity (pounds)							
1937	<u>2/</u> 4,544,447	n.a.	3,833	707	2,184	275	
1938	n.a.	n.a.	4,120	325	400	3,395	
1939	<u>2/</u> 83,857,903	n.a.	1,205	795	357	-	
1943	n.a.	616,057	<u>3/</u> 395	-	-	-	
Value (dollars)							
1937	<u>4/</u> 9,290,384	n.a.	2,471	555	1,217	50	
1938	n.a.	n.a.	1,193	193	174	826	
1939	<u>2/</u> 45,250,272	n.a.	734	489	217	-	
1943	n.a.	508,135	<u>3/</u> 175	-	-	-	

^{1/} Includes Austria in 1938.^{2/} Includes all-spun rayon and spun-rayon mixtures made for sale and for own use by plants using cotton and spun-silk spinning systems.^{3/} Imported from Canada.^{4/} Includes value of yarns made by plants for own use, estimated at \$6,617,000 in 1937 and at \$38,797,000 in 1939.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1303			
Spun rayon yarn:			
Singles -----	12 $\frac{1}{2}$ ¢ lb.	12 $\frac{1}{2}$ ¢ lb.	FRANCE
	+ 45%	+ 45%	
Plied -----	12 $\frac{1}{2}$ ¢ lb.	12 $\frac{1}{2}$ ¢ lb.	Do.
	+ 50%	+ 50%	

Note.— The ad valorem equivalent of the compound rate on single yarns was 76 percent in 1939; and that on plied yarns was 70 percent.

Comment

Spun-rayon yarn (as distinguished from continuous filament rayon yarn, in par. 1301) is made from rayon-staple fiber or from rayon waste and goes into fabrics simulating linen, cotton, or wool, rather than fabrics simulating silk constructions. Yarns spun wholly of staple fiber are produced mainly in the cotton industry, which has converted to that purpose considerable equipment formerly used in spinning cotton. The bulk of the production is in integrated mills which spin the yarn for their own weaving departments. Yarns made for sale constituted less than 15 percent of the total output of spun-rayon yarns in 1939.

Imports of spun rayon yarn at their maximum in 1929 amounted to 384,000 pounds valued at \$251,000; the duty on total imports in that year was equivalent to 48 percent ad valorem. Imports of spun-rayon yarn under the Tariff Act of 1930 have been small, partly as a result of the higher duty (equivalent in percent ad valorem to 59 in 1934 and 92 in 1938) upon imports in this form. This compares with 25 percent ad valorem upon imports of rayon staple fiber, from which the bulk of the yarn is made. Other factors tending to limit imports are the narrowness of the market in which the yarn is sold, and the relatively greater efficiency of the United States cotton spinning industry from which the domestic supplies of spun-rayon yarn are obtained.

RAYON YARNS FOR HANDWORK, AND RAYON SEWING THREAD

Stat. import classes (1939): 3812.4, 3812.5

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from---				
			All countries	FRANCE	Germany ^{1/}	Switzerland	Italy
Quantity (pounds)							
1937	97,152	n.a.	63,149	28,668	3,093	1,208	29,836
1938	n.a.	n.a.	5,874	708	2,641	1,909	515
1939	^{2/} 153,450	n.a.	3,387	666	873	1,485	10
1943	n.a.	^{3/} 40,508	-	-	-	-	-
Value (dollars)							
1937	248,975	n.a.	35,351	15,605	3,619	691	15,035
1938	n.a.	n.a.	6,671	1,123	3,519	1,679	200
1939	^{2/} 509,966	n.a.	3,246	1,130	1,155	790	10
1943	n.a.	^{3/} 60,098	-	-	-	-	-

^{1/} Includes Austria beginning 1938.

^{2/} Includes also handwork yarns of silk which are not separately recorded.

^{3/} Includes sewing thread of nylon and other synthetic fibers.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1304 Yarn of rayon or other synthetic textile put up for handwork, and sewing thread of rayon or other synthetic textile -----	55%	55%	
	ad val.;	ad val.;	
	min.	min.	
	45¢	45¢	
	per lb.	per lb.	FRANCE

Note.- The duty on total imports in 1939 was equivalent to 65 percent ad valorem.

Comment

Imports under paragraph 1304 consist almost wholly of yarns of rayon for handwork, put up in balls, packets, and short-length skeins for retail sale. Imports of rayon sewing thread have been negligible and at their maximum in 1938 amounted to only 153 pounds. In most prewar years Germany was the principal source of imports of rayon yarns for handwork, but in 1937 when they were at their peak, France was the principal source.

The domestic production of rayon sewing thread for household use was attempted but has been virtually abandoned as it proved inferior to silk, cotton and nylon for seaming and stitching. A small amount of industrial sewing thread of rayon is made for use as covering thread to finish seams in underwear and other apparel. Production of rayon sewing thread for industrial purposes increased from 25,000 pounds valued at \$33,000 in 1937 to 104,000 pounds valued at \$113,000 in 1939.

RAYON YARNS FOR HANDWORK, AND RAYON SEWING THREAD--Continued

Rayon embroidery flosses and other yarns for handwork have largely displaced silk because of their price advantage and suitability for decorative effects. This commodity is manufactured by a small number of sewing thread companies which also produce similar handwork yarns of mercerized cotton and of silk. The majority of these companies specialize in cotton and silk thread for industrial use (pound goods) rather than in "small" goods for the retail trade. Yarns for handwork, whether of rayon, cotton, silk or nylon, are, therefore, only an insignificant part of their total output.

Consequent upon the decline in the vogue for art needlecraft in the home, the domestic production of rayon yarns for handwork declined from 1,395,000 pounds in 1929 to 76,000 pounds in 1933. A brief revival of the vogue caused production to rise to 411,000 pounds in 1935 but thereafter the trend was again downward. In 1929 the output of rayon embroidery flosses and other yarns for consumption in the home (including some silk yarns not separately recorded) amounted to about 50,000 pounds valued at \$397,000 and constituted about one-third of the total production of handwork yarns and sewing thread of rayon. Production has supplied over 95 percent of domestic consumption except in 1937, when imports amounted to almost 40 percent of the total quantity consumed.

Exports of rayon yarns for handwork exceeded imports until 1934. From a maximum of 19,000 pounds in 1928 they declined to less than 2,000 pounds in 1935. During the period 1936 to 1941, inclusive, exports were not separately recorded; thereafter exports also included sewing thread of nylon and other synthetic fibers.

RAYON BANDS OR STRIPS NOT EXCEEDING 1 INCH IN WIDTH

Stat. import class (1939): 3815.0

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--			
			All countries	France	Switzerland	UNITED KINGDOM
	Quantity (pounds)					
1937 ---	Not avail- able <u>1/</u>	Not avail- able <u>2/</u>	<u>2/</u> 26,541	468	8,863	3,835
1938 ---			33,328	14,002	18,301	-
1939 ---			36,280	25,280	8,783	2,217
1943 ---			-	-	-	-
	Value (dollars)					
1937 ---	Not avail- able <u>1/</u>	Not avail- able <u>2/</u>	<u>2/</u> 14,981	390	4,084	3,158
1938 ---			18,645	8,774	9,081	-
1939 ---			19,030	11,532	5,158	2,340
1943 ---			-	-	-	-

1/ Believed to be larger than imports. 2/ Known to be very small, if any.

3/ Includes 6,827 pounds valued at \$4,379 imported from Japan, and 4,898 pounds valued at \$1,758 imported from Italy.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	

Par. 1305

Rayon or other synthetic textile in bands or strips not exceeding 1 inch in width, suitable for the manufacture of textiles --- 45% ad val., 45% ad val., 45¢ per lb. min. 45¢ per lb. min.

UNITED KINGDOM

Note.- The duty on total imports in 1939 was equivalent to 87 percent ad valorem or to 46 cents a pound. Most of the imports entered at the specific minimum rate.

Comment

Artificial straw was designated in the Tariff Act of 1922 by the term "visca," and is provided for in paragraph 1305 of the act of 1930 as "Rayon or other synthetic textile in bands or strips not exceeding 1 inch in width, suitable for the manufacture of textiles." This latter denomination further includes ribbon or strip cellophane, also variously known in the trade as cellulose foil yarn and slit cellulose film yarn.

The narrow ribbon-like bands and strips which are dutiable under paragraph 1305 are made from the same raw materials and by the same processes of manufacture as rayon yarn up to the point of extrusion of the chemical solution. For the production of visca, the solution is forced through slit-like or L-shaped orifices varying from less than 1/64 of an inch to 7/8 of an inch or more in width. Strip cellophane is cut from cellophane sheets which are made by extruding the cellulose solution through slots extending across the breadth of the machine and set to permit a gage or sheet thickness of from 0.00038 to 0.0017 of an inch. The operation of slitting cellophane into extremely narrow widths suitable for the manufacture of textiles is not performed by the cellophane producers, as 1/2 inch width is the minimum sold by them. Narrower widths are slit either by the consuming manufacturers themselves or by so-called "custom-slitters."

RAYON BANDS OR STRIPS NOT EXCEEDING 1 INCH IN WIDTH-Continued

Visca is used in substantially the same way as straw, either alone or in combination with hemp, horsehair, or other millinery materials, for the production of hat braids. It is also used for crocheting berets and caps, for knitting imitation-straw fabrics, and for weaving millinery allover and drapery fabrics.

Bands or strips slit from cellophane and other types of transparent sheets compete with artificial straw in the millinery trade. Slit cellophane is used in the manufacture of various types of hat braids. Most important is the type known as pedaline braid which is composed of a center core of abaca (Manila hemp) twisted around and covered with narrow bands of cellophane of usually less than one-half of an inch in width. Narrow strips and extremely fine threads of cellophane are used for the embellishment of many types of novelty fabrics for apparel, curtains, draperies, upholsteries, pile fabrics, and summer floor coverings.

Since visca is made from the same raw material and by the same chemical processes as rayon yarn, its production is intermittently undertaken as a minor sideline in rayon yarn manufacturing plants. Very few rayon companies are interested, however, in its manufacture because it is essentially a style article with a limited sphere of consumption and subject to changes in fashion and to short seasonal demand. Production of visca is not recorded in census reports, but it was never large and at its peak probably did not exceed 800,000 pounds.

The bulk of the cellophane made in the United States is utilized for wrapping purposes. It is estimated that only about 2 or 3 percent of the output is cut into narrow strips for textile and millinery manufacture. Production data are not available.

Imports under paragraph 1305 have consisted almost wholly of visca, and have fluctuated from year to year depending on prevailing styles. They reached a maximum of 145,000 pounds in 1932, but following the abrupt curtailment of demand for visca in 1933 resulting from fashion changes and the expanded imports of competitive millinery materials, they decreased substantially and have not amounted to as much as 50,000 pounds in any subsequent year.

No official statistics for United States exports of Visca and slit cellophane for textile use are available, but any exports of such articles which may have occurred have been very small.

Consumption of visca is greatly dependent on fashion and on the duration of style cycles. Imports normally supply a rather large fraction of consumption. Under these conditions, when visca millinery takes a hold on public fancy, imports tend to increase more or less regardless of duty.

RAYON WOVEN FABRICS, NOT SPECIALLY PROVIDED FOR

Stat. import classes (1939): 383.03, 383.04

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--				
			All countries	Japan	FRANCE	Italy	Switzerland
	Quantity (1,000 pounds)						
1937	<u>1/</u> 204,496	<u>2/</u> 3,674	1,041	772	86	46	22
1938	n.a.	<u>2/</u> 3,735	555	259	55	123	25
1939	<u>1/</u> 329,354	5,956	420	227	85	70	21
1943	n.a.	10,101	66	38	<u>3/</u>	<u>3/</u>	2
	Value (1,000 'dollars)						
1937	<u>1/</u> 212,945	<u>2/</u> 4,858	993	402	280	59	57
1938	n.a.	<u>2/</u> 4,546	671	195	132	161	54
1939	<u>1/</u> 267,241	6,388	470	164	154	80	46
1943	n.a.	17,261	131	23	<u>3/</u>	3	13

1/ Partially estimated.2/ Includes a relatively small amount of knit fabrics not separately recorded in 1937 and 1938.3/ Less than 500.

Source: Official statistics of the U. S. Department of Commerce, except as noted.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate <u>1/</u>	
Woven fabrics in the piece, wholly or in chief value of rayon or other synthetic textile, not specially provided for:			
Not Jacquard-figured -----	45¢ per lb. and 60% ad val.	45¢ per lb. and 45% ad val.	FRANCE
Jacquard-figured -----	45¢ per lb. and 70% ad val.	45¢ per lb. and 45% ad val.	

1/ Trade agreement with France, effective June 1936.

Note.- The specific portion of the duties was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns.") The compound duty on total imports in 1939 was equivalent to 85 percent ad valorem or to 96 cents a pound.

Comment

United States production of fabrics, wholly or predominantly of rayon by weight, increased from 43 million pounds in 1929 to 156 million in 1935 and to almost 330 million in 1939. During the war still further increases occurred until in 1945 production was about 400 million pounds. Much of this material, however, was manufactured for military purposes and for lend-lease and other export requirements. The supply for civilian use, therefore, was curtailed considerably.

RAYON WOVEN FABRICS, NOT SPECIALLY PROVIDED FOR-Continued

Imports of rayon fabrics during the decade preceding the war were only a small fraction of 1 percent of production in the United States. They ranged from 193,000 pounds in 1931 to a record high of 1,041,000 pounds in 1937. Before 1936 imports were supplied principally by France, Germany, Switzerland, and Italy at a foreign value averaging between \$2 and \$3 a pound, or substantially higher than that of domestic fabrics. The imports from Europe consisted mainly of fabrics distinguished for novelty of weave, finish, or design. From 1936 to 1939 almost two-thirds of the imports were from Japan at an average foreign value of about 63 cents a pound. A considerable proportion of the imports from Japan consisted of gray-woven fabrics for finishing and reexport with drawback in duty. (See table below showing imports by kinds in 1939.)

In the years 1937-39 annual exports averaged about $4\frac{1}{2}$ million pounds, valued at 5 million dollars. Cuba, the Philippine Islands, and Canada were the principal markets. During the war, exports increased to several times their former volume and consisted largely of spun-rayon fabrics. Mexico, Venezuela, and Central American countries became important customers. For the next few years exports will probably continue near or above their high wartime level. In the long term, however, exports will be affected by increased competition from European countries and possibly Japan, which have lower manufacturing costs, and by the establishment and development of rayon weaving in countries which formerly were large importers of the fabrics.

Rayon woven fabrics in the piece, n.s.p.f. (except pile): United States
imports for consumption, by kinds, with principal sources, 1939

Kind	Total value	Principal sources
Not Jacquard-figured -----	\$459,040	Japan, \$156,982; FRANCE, \$151,861
Jacquard-figured -----	11,228	Japan, \$7,500; FRANCE, \$2,615

Source: Official statistics of the U. S. Department of Commerce.

RAYON PILE FABRICS (EXCEPT RIBBONS) AND
ARTICLES MADE THEREFROM
(See digest on rayon pile ribbons--paragraph 1307)

Par. No. 1307
FRANCE

Stat. import classes (1939): 383.11-.16 (6 classes), 383.31, 383.32

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--				
			All countries	FRANCE	Mexico	Japan	Czecho-slovakia
	Quantity (pounds)						
1937 -	6,429,923	110,389	6,280	4,344	-	1,467	45
1938 -	n.a.	201,093	13,899	8,741	-	4,517	513
1939 -	<u>1</u> /5,212,000	504,709	30,550	13,523	12,806	3,016	728
1943 -	n.a.	165,320	-	-	-	-	-
	Value (dollars)						
1937 -	9,425,591	219,862	17,988	15,772	-	1,097	74
1938 -	n.a.	302,718	32,892	27,262	-	4,411	782
1939 -	<u>1</u> /5,704,000	617,158	47,300	37,030	5,841	2,460	957
1943 -	n.a.	350,949	-	-	-	-	-

1/ Partially estimated.

Source: Official statistics of the U. S. Department of Commerce, except as noted.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate <u>1</u> /	

Par. 1307

Pile fabrics, *** whether or not the pile covers the entire surface, wholly or in chief value of rayon or other synthetic textile, and all articles, finished or unfinished, made or cut from such pile fabrics:

Pile wholly cut or wholly uncut -	45¢ per lb. and 60% ad val.	25¢ per lb. and 50% ad val.	FRANCE
Pile partly cut -----	45¢ per lb. and 65% ad val.	25¢ per lb. and 50% ad val.	FRANCE

1/ Trade agreement with France, effective June 1936.

Note.- The duty of 45 cents per pound in the Tariff Act of 1930 was intended as compensatory for the duty on rayon yarn. Most rayon pile fabrics, however, contain a substantial proportion of cotton, and for these the correct compensatory rate is closer to 25 cents per pound as provided in the trade agreement with France. On total imports (except pile ribbons) the compound duty of 25 cents per pound and 50 percent ad valorem was equivalent in 1939 to 66 percent ad valorem or to \$1.02 a pound. (For discussion of compensatory duties see note at end of the digest on "Rayon filament yarns," p. 11.)

Comment

Pile fabrics differ from other woven fabrics in having their surface covered in whole or in part by short projecting ends or loops. Fabrics distinguished by a wholly-cut pile have their entire surface covered with short, erect threads, the height of which is one-seventh of an inch or less in velvets and over one-seventh of an inch in plushes. Fabrics characterized by a wholly-uncut pile, have small

RAYON PILE FABRICS (EXCEPT RIBBONS) AND
ARTICLES MADE THEREFROM-Continued

loops extending over the surface. Those with a partly-cut pile are mainly Jacquard-figured goods and other novelties wherein patterns are worked out by a combination of erect pile and loop pile.

The uses of pile fabrics vary according to their type. Light weight velvets, plushes, and chenilles are mainly for apparel and headgear; heavy plushes, velours, friezes and moquettes are principally for drapery, upholstery, and other decorative uses. Although some consist wholly of rayon, most of the fabrics here considered have rayon only in the pile, the ground fabric being of cotton. The fiber of chief value in these rayon-and-cotton mixed fabrics is usually rayon, but under certain price conditions it may be cotton, in which case imports are dutiable as cotton pile fabrics in paragraph 909. Imports of fabrics with a rayon pile and silk back are usually in chief value of silk and dutiable under paragraph 1206.

Rayon pile fabrics are made by mills which also weave pile fabrics of other fibers. Velvet and plush looms are adapted for specific pile constructions within certain weight and width ranges and can be utilized for various fibers or combinations of fibers depending on demand. Style and consumer purchasing power are the main factors determining demand.

Imports have been composed largely of fabrics which sold in the United States at much higher prices than similar domestic fabrics. During the thirties approximately 85 percent of the total quantity of imports were velvets with a wholly-cut pile. Specialties with a partly-cut pile were slightly over 5 percent of the total imports of pile fabrics; imports of articles made from pile fabrics were negligible during the decade.

Total imports in 1929 of pile fabrics and articles made therefrom were in excess of 90,000 pounds, and were valued at more than \$538,000. Fashion and income changes thereafter caused imports to decline sharply; at their minimum in 1935, they were 6,300 pounds valued at \$22,000. The quantity imported remained approximately the same in 1936 and 1937 notwithstanding reduction of the duty by trade agreement. Although imports increased in the period immediately preceding the war, they still were far below the level of 1929 and 1930 and were insignificant as compared with production and exports.

Rayon pile fabrics (except ribbons) and articles made therefrom:
United States imports for consumption, by kind, with
principal sources, 1939

Kind	Total value	Principal sources
Velvets:		
Pile wholly cut or wholly uncut -	\$43,401	FRANCE, \$34,553; Mexico, \$5,841
Pile partly cut -----	1,081	FRANCE, \$1,081
Other pile fabrics, including chenilles:		
Pile wholly cut or wholly uncut -	2,188	FRANCE, \$871; Japan, \$784
Pile partly cut -----	15	FRANCE, \$15
Articles made or cut from pile fabrics:		
Pile wholly cut or wholly uncut -	404	FRANCE, \$398
Pile partly cut -----	211	FRANCE, \$112,; Japan, \$99

Source: Official statistics of the U. S. Department of Commerce.

RAYON PILE RIBBONS

Stat. import classes (1939): 383.21, 383.22

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--			
			All countries	FRANCE	Switzer-land	Japan
Quantity (pounds)						
1937 ----	Not avail- able ^{1/}	Not avail- able ^{2/}	17,449	15,985	-	1,276
1938 ----			31,554	31,381	-	158
1939 ----			69,325	68,582	743	-
1943 ----			91	91	-	-
Value (dollars)						
1937 ----	Not avail- able ^{1/}	Not avail- able ^{2/}	47,102	45,593	-	746
1938 ----			67,846	67,429	-	360
1939 ----			144,942	142,398	2,544	-
1943 ----			274	274	-	-

^{1/} Known to be larger than imports. ^{2/} Probably smaller than imports.
Source: Official statistics of the U. S. Department of Commerce.

ItemUnited States tariffProposed
negotiating
country

Act of 1945
1930 rate ^{1/}

Par. 1307

Pile ribbons, whether or not the pile covers the entire surface, wholly or in chief value of rayon or other synthetic textile:

Pile wholly cut or wholly uncut -----

45¢ lb. + 25¢ lb. +
60% ad val. 50% ad val.

FRANCE

- Pile partly cut -----

45¢ lb. + 25¢ lb. +
65% ad val. 50% ad val.

FRANCE

^{1/} Trade agreement with France, effective June 1936.

Note.- The specific portion of the duties was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns"). The reduction of the specific duty to 25 cents per pound was in recognition of the utilization of other fibers in conjunction with rayon in the construction of the pile ribbons dutiable under this paragraph. The compound duty on total imports in 1939 was equivalent to 62 percent ad valorem or to \$1.30 a pound.

Comment

Pile fabrics are distinguished from other fabrics by their surface, which is covered in whole or in part by a series of short ends or loops projecting from the body of the cloth. These fabrics are known as "cut" or "loop" (uncut) pile, according as the loops have been cut or left as woven. Fabrics having a cut pile one-seventh of an inch or less in length are classified as velvets, and most pile ribbons fall in this category.

RAYON PILE RIBBONS--Continued

Velvet ribbons are used for dress and millinery trimmings, beltings, hair ornaments, and other decorative accessories. Rayon, silk, and cotton are employed interchangeably both for the pile and the ground fabric. When rayon is used for the pile, the foundation cloth may be either wholly or in part of cotton, silk, or rayon. The fiber predominating in value varies in accordance with the cost and proportion of the constituent fibers used.

Two types of velvet ribbons are made--fast-edge and cut-edge. Fast-edge velvet ribbons are woven with selvages on pile-ribbon looms; cut-edge velvet ribbons are made by splitting wide velvet fabrics into strips and then gumming the edges to prevent fraying. Cut-edge ribbons can be made at much lower cost and are acceptable substitutes for fast-edge ribbons in most uses in the popular-price field. Orders for cut-edge ribbons can be filled quickly in almost any desired width, color, or quality, a point which is especially important in an article subject to style changes.

Imports consist largely of fast-edge velvet ribbons. The production of such ribbons in the United States was abandoned in the 1920's because of the limited market, the spasmodic demand, and the competition from cut-edge ribbons.

Statistics of the production of cut-edge pile ribbons in the United States are not reported. The production of rayon velvet fabrics suitable for this purpose is large, amounting to 2,712,000 pounds having an estimated value of \$4,204,000 in 1939, but probably not over 5 percent of the total quantity was used for cutting into ribbons. However, the production is believed to be much larger than the imports of all rayon pile ribbons.

Total imports of pile ribbons (both of rayon and of silk) decreased from approximately 150,000 pounds in 1931 to 12,500 pounds in 1935. Subsequently the trade increased, reaching 127,000 pounds in 1939. Imports of pile ribbons in chief value of rayon, which were less than 20 percent of the total quantity before 1937, increased in 1939 to 54 percent of the total. In postwar years it is expected that imports of rayon pile ribbons will constitute an even larger proportion of the total, possibly as high as 90 percent.

Pile ribbons, wholly or in chief value of rayon: United States imports
for consumption, by kinds, with principal sources, 1939

Kind	: Total : value	: :	Principal source
Pile wholly cut or wholly uncut --	\$142,663	:	FRANCE, \$140,119
Pile partly cut -----	2,279	:	FRANCE, \$2,279

Source: Official statistics of the U. S. Department of Commerce.

Stat. import classes (1939): 386.30-386.35 (6 classes)

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports ^{1/}	Imports for consumption from--				
			All countries	FRANCE	Switzer- land	Japan	Italy
	Quantity (pounds)						
1937	Not	Not	34,486	6,360	2,903	10,594	11,709
1938	avail-	avail-	12,424	6,664	745	1,538	3,083
1939	able	able	13,766	9,999	1,878	1,251	302
1943			2/ 1,671	-	-	610	-
	Value (dollars)						
1937	11,900,368	168,476	53,408	19,427	8,244	6,246	14,269
1938	n.a.	156,908	25,786	17,235	2,079	969	4,164
1939	3/ 16,708,000	224,356	35,469	27,306	5,987	744	373..
1943	n.a.	4/ 823,461	2/ 2,932	-	-	427	-

^{1/} Ribbons only.^{2/} Includes 1,021 pounds valued at \$2,301 imported from the United Kingdom.^{3/} Census data have been adjusted to eliminate braids, and estimated production of fringes, gimps, and certain other smallwares which do not coincide with the items imported under par. 1308. Data do not include garters, suspenders and braces, the production of which is not reported by fiber content.^{4/} Includes nylon ribbons.

Source: Official statistics of the U. S. Department of Commerce, except as noted.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate ^{1/}	
Par. 1308			
Fabrics, with fast edges, not ex- ceeding 12 inches in width, and articles made therefrom; tubings, garters, suspenders, braces, cords, tassels, and cords and tassels; all the foregoing wholly or in chief value of rayon or other syn- thetic textile, or of rayon or other synthetic textile and india rubber, and not specially provided for	45¢ lb. + 60% ad val.	45¢ lb. + 45% ad val.	FRANCE
If Jacquard-figured	45¢ lb. + 70% ad val.	45¢ lb. + 45% ad val.	do.

^{1/} Trade agreement with France, effective June 1936.

Note.- The specific portion of the duties was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns"). The compound duty on total imports in 1939 was equivalent to 63 percent ad valorem or to \$1.61 a pound.

Comment

Included within the scope of this paragraph are rayon ribbons, hatbands, beltings, bindings, tubings, cords and tassels, and certain articles such as garters, suspenders and braces made of webbing woven of rayon and india rubber. Webbing, however, and other elastic fabrics of rayon and india rubber (although

RAYON SMALLWARES-Continued

made with fast edges and less than 12 inches in width) are dutiable, at 40 percent ad valorem, under paragraph 1529(c). Ribbons constituted about 84 percent of the total imports of rayon smallwares during 1935-39. Other narrow-woven fabrics and articles made thereof constituted 14 percent; less than 2 percent consisted of tubings, cords, and tassels.

During the period of lowered consumer purchasing power in the early and middle thirties, imports of rayon smallwares averaged \$93,000 annually and were two and one-half times as great in value as imports of silk smallwares. Until modified by the trade agreement with France, which did not change the specific part of the duty, the statutory compound duty under the act of 1930 on total imports of rayon smallwares was equivalent to about 75 percent ad valorem. From the effective date of the trade agreement (June 15, 1936) until the end of 1939, the duty was equivalent to about 69 percent ad valorem. Despite the reduction in duty, imports of rayon smallwares during this period declined to an average of \$37,000 a year and became less in value than imports of silk smallwares.

Imports of rayon ribbons, the chief article under the paragraph, amounted at their maximum to 56,000 pounds valued at \$159,000 in 1931. Thereafter imports fluctuated in accordance with changes in consumer purchasing power and style trends. With the improvement in business conditions, after the middle thirties, imports of rayon ribbons declined whereas imports of silk ribbons increased. Rayon ribbons, however, greatly predominated in quantity and in most years also in value. (Imports of rayon smallwares by kinds in 1939 are shown in the table below.)

Domestic production of narrow fabrics and smallwares of rayon, like imports, consists principally of ribbons. The ribbon industry in this country is, next to the sewing thread industry, the oldest established branch of silk manufacturing but it no longer produces ribbons of silk as its main product. The manufacture of rayon ribbons rose from \$3,254,000 in 1931 to \$8,645,000 in 1939. In the latter year, rayon ribbons accounted for about 55 percent of the total output of ribbons as compared with only 20 percent in 1931.

Export data are lacking for rayon smallwares other than ribbons. Exports of ribbons have increased rapidly and since 1940 have been valued at over \$500,000 annually. The principal markets are Canada, Mexico, Cuba, and the Union of South Africa.

Ribbons of domestic manufacture consist mainly of staples and such fancies as can be made in substantial volume for the medium-price trade. Imports, which in value were less than 1 percent of the total consumption in prewar years, are largely specialties having a limited market. As the bulk of the articles under this paragraph are ornamental in use and accessory in character, demand is subject to fashion influences and the degree of general prosperity.

Rayon smallwares: United States imports for consumption, by kinds, with principal sources, 1939

Kind	Total value	Principal sources
Fabrics with fast edges, not over 12 inches in width, and articles made therefrom:		
Ribbons	\$33,168	FRANCE, \$25,791; Switzerland, \$5,909
Other, including garters, suspenders, and braces	2,022	FRANCE, \$1,333; United Kingdom, \$502
Tubings	None	
Cords and tassels	279	FRANCE, \$182

Source: Official statistics of the U. S. Department of Commerce.

RAYON KNIT FABRIC, IN THE PIECE

Stat. import class (1939): 383.50

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--			
			All countries	FRANCE		
Quantity (pounds)						
1937 ----	<u>1/</u> 25,788,480	n.a.	868	813		
1938 ----	n.a.	n.a.	5,037	4,917		
1939 ----	n.a.	116,696	7,173	7,173		
1943 ----	n.a.	<u>2/</u> 753,915	<u>3/</u> 23	-		
Value (dollars)						
1937 ----	<u>1/</u> 20,483,282	n.a.	2,864	2,782		
1938 ----	n.a.	n.a.	11,966	11,738		
1939 ----	n.a.	116,978	15,096	15,096		
1943 ----	n.a. (see text)	<u>2/</u> 1,617,307	<u>3/</u> 33	-		

1/ Includes 19,152,714 pounds of circular-knit fabric, valued at \$13,576,894, and 6,635,766 pounds of warp-knit fabric, valued at \$6,906,388.

2/ Includes 103,947 pounds, valued at \$88,736 exported under lend-lease.

3/ From Canada.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	

Par. 1309

Knit fabric, in the piece, wholly or in chief value of rayon or other synthetic textile 1/ -----

45¢ lb. 45¢ lb.
+ 60% + 60%

FRANCE

1/ Limited by definition in the tariff act (par. 1313) to those made from cellulosic materials.

Note.- The specific portion of the duty was intended as compensatory for the duty on rayon yarn. (For discussion of this, see note at end of the digest on "Rayon filament yarns.") The compound duty on imports in 1939 was equivalent to 81 percent ad valorem.

Comment

An early use for rayon yarn was in the production of circular-knit rayon jersey, then called "tricolette." This fabric established the importance of the "commercial knitter," a manufacturer who produces knit fabric for sale. Most of the commercial circular-knit fabric, now more generally known as rayon tubing, is purchased by cutters producing underwear and nightwear. Adaptation of rayon to warp-knitting followed with the development of finer and stronger rayon yarns. Warp-knit fabric can be made run-proof. Even before Government restrictions were imposed on the use of silk, in 1941, rayon warp-knit fabric had not only practically replaced the more expensive silk warp-knit fabric (glove-silk) for underwear but had broadened the demand generally for warp-knit fabric underwear. Rayon warp-knit fabric has also attained wide acceptance for dresses; it has long been a material competitive with sueded cotton warp-knit fabric for gloves and it is entering the market for curtains, draperies, and many other purposes. For each use special types of fabrics are developed which cannot here be described in detail.

RAYON KNIT FABRIC, IN THE PIECE-Continued

Rayon fabric is knit for sale by commercial knitters, by underwear manufacturers, and by several of the large producers of rayon yarn. New York and Pennsylvania probably still lead in production, but a tendency to establish rayon knit fabric plants in other areas has grown recently. Mills knitting fabric for their own use in garments produce a relatively small part of total United States knit rayon fabric output. Approximately 80 percent of the circular-knit and 70 percent of the warp-knit underwear is made of purchased fabric. In 1945 nearly 23 million pounds of rayon tubing and over 22 million pounds of rayon warp-knit fabric were produced for sale. Of these totals, underwear fabric constituted 15 and 8 million pounds, respectively, and dress fabric 3 and 13 million pounds. War shortages of woven materials stimulated the demand for knit fabric and the introduction of "high-speed" knitting machines in the immediate prewar years greatly increased capacity.

About 600 high-speed warp-knitting machines are installed in the United States. Most of them are the latest prewar models from German builders, who supplied 90 percent of the world market. The German high-speed machines can produce 21 to 28 square yards of fabric per hour; a new British machine is reported capable of producing 70 square yards of a similar fabric per hour. The British machine is owned by Courtaulds, Ltd., large rayon manufacturers. Presumably United States manufacturers will be able to obtain the British-type machines at about the same time that British or other foreign manufacturers obtain them.

In the past, imports of rayon knit fabric in the piece have supplied a negligible part of domestic consumption.

RAYON GLOVES AND MITTENS, KNIT OR CROCHETED, NOT EMBROIDERED
OR OF LACE

(See separate digests on Cotton gloves, pars. 915 and 917, and on Silk gloves, par. 1208)

Stat. import classes (1939): 384.002 and 384.003

United States production, exports, and imports, 1937-39 and 1943

Year	Production ^{1/}	Domestic exports	Imports for consumption from--				
			All countries	Germany ^{2/}	Japan	Poland and Danzig	CZECHOSLOVAKIA
Quantity (dozen pairs)							
1937 -	1,427,539	Not avail- able ^{3/}	425,336	135,620	58,643	1	226,318
1938 -	n.a.		183,876	6,952	19,393	-	155,152
1939 -	2,343,637		62,248	21,401	26,819	7,712	5,650
1943 -	1,292,000		<u>4/</u> 134	-	-	-	-
Value (dollars)							
1937 -	8,018,961	Not avail- able ^{3/}	706,377	241,044	52,713	2	403,728
1938 -	n.a.		313,912	12,423	18,115	-	273,185
1939 -	12,501,772		101,985	51,430	22,812	14,120	11,044
1943 -	n.a.		<u>4/</u> 520	-	-	-	-
Unit value (per dozen pairs)							
1937 -	\$5.62	Not avail- able	\$1.66	\$1.78	\$0.90	\$2.00	\$1.78
1938 -	n.a.		1.71	1.79	.93	-	1.76
1939 -	5.33		1.64	2.40	.85	1.83	1.95
1943 -	n.a.		<u>4/</u> 3.88	-	-	-	-
Unit value (per pound)							
1937 -	Not	Not	\$2.87	\$3.21	\$1.52	\$2.00	\$3.03
1938 -	avail-	avail-	3.05	3.29	1.45	-	3.22
1939 -	able	able	2.85	4.46	1.39	3.43	3.37
1943 -	-	-	<u>4/</u> 5.15	-	-	-	-

^{1/} Rayon dress gloves and mittens made of warp-knit fabric.^{2/} Includes Austria beginning 1938.^{3/} Probably negligible.^{4/} Imported from Canada.

Source: Official statistics of the U. S. Department of Commerce.

ItemUnited States tariffProposed
negotiating
countryAct of
19301945
rate

Par. 1309

Gloves and mittens, knit or crocheted, finished or unfinished, wholly or in chief value of rayon or other synthetic textile: ^{1/}

Valued at less than \$1.50 per dozen pairs -----

45¢ per lb. 45¢ per lb.
+ 65% ad + 65% ad
val. val.

CZECHOSLOVAKIA

Valued at \$1.50 or more per dozen pairs -----

45¢ per lb. 45¢ per lb.
+ 65% ad + 65% ad
val. val. ^{2/}

do.

^{1/} Limited by definition in the tariff act (par. 1313) to those made from cellulosic materials.^{2/} Reduced to 45¢ per pound plus 50 percent ad valorem in the trade agreement with Czechoslovakia, effective from April 1938 to April 1939.

Note.--The specific portion of the duty was intended as compensatory for the duty on rayon yarn. (For discussion of this, see note at end of the digest on "Rayon filament yarns.") The compound duties on total imports in 1939 were equivalent to 77 percent ad valorem. (See table at end of the digest for specific and ad valorem equivalents by value brackets.)

RAYON GLOVES AND MITTENS, KNIT OR CROCHETED, NOT EMBROIDERED OR OF LACE--Continued

Comment

Rayon gloves are predominantly of the type known as "fabric" gloves. ^{1/} These are cut and sewed from rayon warp-knit fabric which usually has been given a finish similar to that of sueded cotton warp-knit glove fabric. Rayon circular-knit fabric, to a limited extent, is also used for gloves. Still other types, such as "string" glove styles or brushed styles simulating wool, are knit or crocheted directly from yarn. Rayon gloves ornamented with embroidery or lace are dutiable in paragraph 1529 (a) at 90 percent ad valorem.

The annual United States consumption of dress gloves made of textile materials other than wool amounts to $2\frac{1}{2}$ -3 million dozen pairs. Although this total has remained approximately the same from year to year, the quantity of rayon gloves used and the amount supplied by imports have changed significantly. For many years the United States market for textile dress gloves was preempted by German cotton warp-knit fabric gloves. The once substantial imports of German cotton fabric gloves dwindled in the middle 1930's because of numerous trade difficulties. At that time there were limited facilities in the United States for producing sueded cotton fabric similar to that used in imported gloves. Buyers shifted, therefore, to rayon warp-knit fabric gloves. From less than 500,000 dozen pairs in 1932, the production of rayon warp-knit fabric gloves increased to nearly $1\frac{1}{2}$ million dozen in 1937 and to over $2\frac{1}{4}$ million dozen in 1939.

Imports of rayon gloves benefited from the greater emphasis on rayon in domestic sales and increased from an average of 80,000 dozen pairs in previous years to over 400,000 dozen pairs in 1936 and 1937. These imports were mainly from Germany and the adjoining (Sudeten) districts of Czechoslovakia. They never attained the position that had been held by imported cotton gloves and declined abruptly in 1938 and 1939, during the controversy which resulted in the absorption of Czechoslovakia by Germany. Japan was the principal source of the reduced imports in 1939. The gloves from that country had a much lower average value than those from other countries.

The large warp-knit fabric glove production in 1939 was about equally divided between establishments that purchased fabric and mills that knit their own fabric. Many leather-glove and some work-glove manufacturers, particularly in the Middle West, have entered the fabric dress glove field. They produce gloves from purchased fabric. Despite production increases in new areas, New York probably still leads in fabric dress glove production. Manufacturers frequently make both cotton gloves and rayon gloves or, impelled by style or economic forces, shift from one fabric to the other. When imports have been large some of the principal manufacturers (including several with knitting equipment) have been among the principal glove importers.

Although other systems of knitting are increasingly used in the production of gloves, warp-knitting remains dominant in textile dress gloves. Nylon and other noncellulosic synthetic textiles, because of quick-drying properties, will undoubtedly compete to an increasing extent with cotton and with rayon for use in fabric dress glove production.

^{1/} The term gloves is here used to include gloves and mittens. Comparatively few rayon mittens are produced.

RAYON GLOVES AND MITTENS, KNIT OR CROCHETED, NOT EMBROIDERED OR OF LACE--Continued

Rayon gloves and mittens: United States imports for consumption, by
import classes, with principal sources, 1939

Import classes	Specific equivalent of the duty	:Ad valorem: equivalent: of the duty	Total value	Principal sources
	:Per dozen: pairs	Per pound:	Percent	
Valued per dozen	:	:	:	:
pairs at:	:	:	:	:
Less than \$1.50:	\$0.83	\$1.37:	97	: Japan, \$22,680;
\$1.50 or more -:	1.60	2.89:	71	: CZECHOSLOVAKIA, \$753
	:	:	:	: Germany, \$51,430; 2/
	:	:	:	: Poland and Danzig,
	:	:	:	: \$14,120; 3/ CZECHOSLO-
	:	:	:	: VAKIA, \$10,291 3/

1/ Including gloves valued at \$26,409 imported at the trade agreement rate.

2/ Dutiable at the rate of the act of 1930. Includes imports from Austria.

3/ Dutiable at the trade agreement rate.

Source: Official statistics of the U. S. Department of Commerce.

RAYON HOSIERY

Stat. import class (1939): 384.01

United States production, exports, and imports, 1937-39 and 1943

Year	Production ^{1/}	Domestic exports	Imports for consumption from--				
			All countries	Germany ^{2/}	FRANCE	Czecho-slovakia	United Kingdom
Quantity (dozen pairs)							
1937 -	30,591,156	208,986	198	6	37	106	40
1938 -	n.a.	160,929	451	-	19	178	2
1939 -	33,102,114	235,635	544	451	34	58	-
1943 -	n.a.	^{3/} 676,853	^{4/} 48	-	-	-	-
Value (dollars)							
1937 -	40,910,916	404,945	955	22	197	174	550
1938 -	n.a.	322,020	601	-	52	321	11
1939 -	42,632,417	439,029	812	590	134	84	-
1943 -	n.a.	^{3/} 3,881,679	^{4/} 245	-	-	-	-

1/ Includes hosiery of all-rayon, rayon with cotton tops, heels and toes, and rayon-and-cotton.

2/ Includes Austria beginning 1938.

3/ Includes 1,285 dozen pairs, valued at \$840, exported under lend-lease.

4/ Includes 45 dozen pairs, valued at \$171, imported from China.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1309			
Hose and half-hose, finished or unfinished, wholly or in chief value of rayon or other synthetic textile ^{1/}	45¢ lb. + 65% ad val.	45¢ lb. + 65% ad val.	FRANCE

1/ Limited by definition in the tariff act (par. 1313) to that made of cellulosic material.

Note.-- The specific part of the duty is intended to be compensatory for the duties on rayon yarn. (For discussion of this see note at end of the digest on "rayon filament yarns.") The compound duties on total imports in 1939 were equivalent to 85 percent ad valorem or to \$1.95 per pound.

Comment

Imports under paragraph 1309 have supplied only a minute fraction of United States all-rayon or rayon-mixed hosiery consumption. ^{1/} If in chief value of cotton, hosiery imports are dutiable under paragraph 916 and most of those containing a mixture of rayon and cotton have entered under the cotton classification rather than under paragraph 1309. Slight changes in the proportion of rayon to cotton or slight differences in the relative price of the two yarns would frequently be sufficient to cause a shift of imports from one paragraph to the other. Total imports under the principal cotton hosiery classification (dutiable at 50 percent ad valorem)

^{1/} Rayon-mixed hosiery here refers to rayon-and-cotton hosiery; some hosiery is also produced of mixtures of rayon with silk and wool.

RAYON HOSIERY—Continued

increased from less than 500,000 dozen pairs in 1934 to approximately 2.3 million dozen pairs in 1936, when large quantities of inexpensive Japanese half-hose appeared on the market. Imports in the same classification declined to 1 million dozen pairs in 1939. The hosiery dutiable under paragraph 916 is not included in the list of items for consideration in the proposed negotiations.

While women like their hosiery plain, men like theirs fancy. For this reason rayon is especially important in the men's hosiery field; some large manufacturers seek a few fine, patterned half-hose abroad to diversify their lines; and men's hosiery predominates in imports. Lustrous rayon ornamentation can brighten a dull ground and rayon yarns with different dye properties can be used together or combined with cotton for the multi-color designing employed in men's half-hose.

In 1939 United States production of rayon and rayon-mixed hosiery (nearly all seamless) amounted to about 33 million dozen pairs, valued at 43 million dollars. Over three-fourths of the total quantity was men's hosiery. Of all the men's hosiery produced in the United States in that year, the 25 million dozen pairs of rayon and rayon-mixed hosiery constituted nearly one-half, but out of a total of 64 million dozen pairs of women's hosiery, only 4 million dozen pairs were rayon and rayon-mixed. Production of rayon hosiery for infants and children was about 4 million dozen pairs in 1939. War conditions effected marked changes in the output of men's and women's rayon hosiery. Cotton and wool socks supplied the needs of the armed services and by 1944 rayon hosiery had declined to about one-fifth the total men's hosiery production. In the absence of silk and nylon for civilian use, over 36 million dozen pairs of full-fashioned rayon hosiery (almost the entire full-fashioned outturn) and over 5 million dozen pairs of seamless rayon hosiery were made for women.

Now that the war is over, rayon will doubtless regain its accustomed share of the market for men's hose. Experience obtained with rayon during the war and facilities developed then for making high-tenacity rayon yarn may enable rayon to hold some of its wartime gains in the market for women's full-fashioned hose. Its use there will be limited, however, both by the return of nylon to ascendancy in the full-fashioned hosiery field, and by circumstances which reduce the advantages of full-fashioned over seamless hose, particularly the turning to account of nylon's thermoplastic properties to shape the legs of hosiery knit on improved seamless hose machines.

RAYON KNIT UNDERWEAR AND OUTERWEAR (EXCEPT
GLOVES, HOSIERY, AND HEADWEAR)

Stat. import classes (1939): 384.021, 384.029, 384.11

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--				
			All countries	FRANCE	Japan	United Kingdom	Switzer- land
Quantity (pounds)							
1937	<u>1</u> /39,000,000	Not avail- able	<u>2</u> / 1,680	349	318	152	67
1938	n.a.		890	204	146	-	131
1939	n.a.		<u>3</u> / 1,264	614	377	97	61
1943	n.a.		161	-	2	71	-
Value (dollars)							
1937	<u>1</u> /47,000,000	612,060	<u>2</u> / 5,702	2,529	208	664	169
1938	n.a.	793,903	2,490	1,027	277	-	393
1939	n.a.	977,466	5,236	4,195	440	359	63
1943	n.a.	<u>4</u> / 724,432	<u>3</u> / 628	-	4	157	-

1/ Partially estimated by the United States Tariff Commission; production has probably increased substantially since 1937.

2/ Includes 513 pounds valued at \$1,386 imported from Germany.

3/ Includes 40 pounds, valued at \$315, imported from Syria.

4/ Includes articles valued at \$19,694 exported under lend-lease.

Source: Official statistics of the U. S. Department of Commerce, except as noted.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	
Par. 1309			
Knit underwear, finished or unfinished, wholly or in chief value of rayon or other synthetic textile: 1/			
Valued at not more than \$1.75 per pound -----	45¢ lb. + 65% ad val.	45¢ lb. + 65% ad val.	FRANCE
Valued at more than \$1.75 per pound -----	45¢ lb. + 65% ad val.	45¢ lb. + 35% ad val. 2/	do.
Outerwear, and articles of all kinds, n.e.s. (except headwear) knit or crocheted, finished or unfinished, wholly or in chief value of rayon or other synthetic textile 1/ -----	45¢ lb. + 65% ad val.	45¢ lb. + 65% ad val.	do.

1/ Limited by definition in the tariff act (par. 1313) to those made from cellulosic materials.

2/ Trade agreement with Switzerland, effective February 1936.

Note.- The specific portion of the duty was intended as compensatory for the duty of rayon yarn. (For discussion of this, see note at end of the digest on "Rayon filament yarns.") The ad valorem equivalent of the compound duties on each class of imports in 1939 is given in the table at the end of the digest.

RAYON KNIT UNDERWEAR AND OUTERWEAR (EXCEPT GLOVES, HOSIERY, AND HEADWEAR)-Con.

Comment

Imports of articles here considered have been negligible. They consist chiefly of outerwear from France, the average value of which, before duty, has been from \$5 to \$7 a pound, or much more than the estimated average value, at the factory, of rayon knit outerwear produced in the United States.

In this country the production of rayon knit underwear and nightwear (estimated for 1937 at 34 million pounds valued at 38 million dollars) is far greater than that of rayon knit outerwear. Rayon is not one of the principal materials used in the knit outerwear industry, but the manufacture of dresses from rayon warp-knit fabric (popularly known as rayon jersey) is substantial. These are made chiefly by dress manufacturers from fabric purchased in the piece. Production of all rayon knit outerwear here considered (including dresses of warp-knit fabric) is estimated to have been 5 million pounds, valued at 9 million dollars, in 1937. It was more than twice as great in 1945. The increase occurred in women's dresses and suits of warp-knit fabric, the manufacture of which was stimulated both by the shortage of woven fabric, and by technical improvements increasing the speed of warp-knitting machines.

Exports have been many times greater than imports. They consist principally of dresses and ensembles but include substantial quantities of underwear.

Rayon knit underwear and outerwear (except gloves, hosiery, and headwear):
United States imports for consumption, by kinds, with principal
sources, 1939

Kind	:Ad valorem:			Principal sources
	:equivalent: Total			
	: of the : imports :			
	: duties :			
	: <u>Percent</u> :			
Underwear:	:	:	:	
Not more than \$1.75 per pound -:	102	:	\$36	Hong Kong, \$24; Germany $\frac{1}{2}$
	:	:	:	\$12
More than \$1.75 per pound -----:	47	:	1,055	FRANCE, \$665; United
	:	:	:	Kingdom, \$281
Outerwear -----:	75	:	4,145	FRANCE, \$3,530; Japan,
	:	:	:	\$440
Total -----:	69	:	5,236	FRANCE, \$4,195; Japan,
	:	:	:	\$440; United Kingdom,
	:	:	:	\$359
	:	:	:	

^{1/} Includes Austria.

Source: Official statistics of the U. S. Department of Commerce.

MILLINERY OF RAYON, KNIT OR CROCHETED
(See also Summary Digest on Hats, par. 1504)

Stat. import class (1939): 3927.3

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--				
			All countries	FRANCE	Japan	Italy	Switzerland
1937 1938 1939 1943	Quantity (dozens)						
	85,100	Not	2,307	49	1,119	368	495
	Not	available;	1,166	215	474	304	17
	avail-	probably	1,752	432	660	626	34
	able $\frac{1}{2}$	small	-	-	-	-	-
1937 1938 1939 1943	Value (dollars)						
	707,769	Not	6,964	635	1,827	1,294	2,714
	Not	available;	3,078	1,070	981	652	102
	avail-	probably	4,735	2,084	1,301	1,160	190
	able $\frac{1}{2}$	small	-	-	-	-	-

 $\frac{1}{2}$ Believed to be many times the quantity and value of imports

Source: Official statistics of the U. S. Department of Commerce.

ItemUnited States tariffProposed
negotiating
countryAct of
19301945
rate

Par. 1309

Hats, bonnets, and hoods, knit
or crocheted, finished or
unfinished, wholly or in chief
value of rayon or other syn-
thetic textile -----45¢ lb. + 45¢ lb. +
65% ad val. 65% ad val.

FRANCE

Note.- The specific portion of the duty was intended as compensatory for the duty on raw material imported under paragraphs 1301 and 1305. (For further discussion of this, see note at end of the digest on "Rayon filament yarn.") The compound duty on total imports in 1939 was equivalent to 84 percent ad valorem (\$1.96 per pound), or to \$0.19 per hat. The specific rate has amounted to less than 25 percent of the total duty.

Comment

Knit or crocheted hats of rayon comprise a small part of the millinery consumed in the United States. In 1937, the last year for which data are available, the value of domestic production of knit or crocheted rayon hats amounted to about one-third of the value of all millinery made of rayon, and to less than 1 percent of the total production of the millinery industry. The vagaries of fashion result in considerable variation in both the quantity produced domestically and imported. However, at a reduced cost, which would permit retail sales in the lower price ranges, both production and imports would tend to increase, and fluctuations due to style changes would be considerably lessened.

The millinery imported under this classification, the volume of which is very small in relation to the United States output, is in general comparable with the kinds and qualities produced in the domestic industry. A small proportion of the imports, however, are specialties or kinds not produced to any great extent in this country because of intricate hand work or special finishes.

MILLINERY OF RAYON, KNIT OR CROCHETED—Continued

As already indicated, the specific portion of the duty on knit or crocheted millinery of rayon is compensatory for the duties on rayon filament yarn under paragraph 1301 and rayon hands or strips dutiable under paragraph 1305, the materials used in making this millinery. If the duty on these materials is reduced, a corresponding reduction could appropriately be made in the specific duty on millinery of rayon. A change in the duty on knit or crocheted rayon millinery should be related to changes in the duties on other millinery and millinery materials which are on the list of items for consideration in the proposed negotiations (see summary digest on hats, par. 1504).

PLAIN RAYON HANDKERCHIEFS AND WOVEN MUFFLERS

Stat. import classes (1939): 3850.0, 3850.1

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from—				
			All countries	Japan	Germany <u>1/</u>	FRANCE	Italy
Quantity (pounds)							
1937	Not	Not	4,434	4,028	-	93	-
1938	avail-	avail-	20,399	2,508	3	39	17,378
1939	able <u>2/</u>	able <u>3/</u>	1,265	1,181	38	21	-
1943		<u>4/</u>	1,795	-	-	-	998
Value (dollars)							
1937	Not	Not	9,433	7,997	-	518	-
1938	avail-	avail-	26,662	1,902	12	361	23,884
1939	able <u>2/</u>	able <u>3/</u>	1,588	1,337	107	92	-
1943		<u>4/</u>	3,334	-	-	-	1,265

1/ Includes Austria beginning 1938. 2/ Believed to be larger than imports.3/ Believed to be smaller than imports.4/ Includes 668 pounds valued at \$1,391 imported from United Kingdom.

Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	

Par. 1310

Handkerchiefs and woven mufflers,
wholly or in chief value of rayon
or other synthetic textile, finished
or unfinished:

Not hemmed -----	45¢ lb. + 60% ad val.	45¢ lb. + 60% ad val.	FRANCE
Hemmed or hemstitched -----	45¢ lb. + 65% ad val.	45¢ lb. + 65% ad val.	FRANCE

Note.— The specific portion of the duties was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns"). The compound duty on total imports in 1939 was equivalent to 101 percent ad valorem or to \$1.27 a pound.

Comment

Very little information is available concerning the domestic production of rayon handkerchiefs and mufflers. Although rayon yarns had been used for several years before the late thirties as a component material for providing novel effects in the weaving of some handkerchief fabric (especially cotton), rayon was not generally accepted by the consuming public as suitable material for handkerchiefs for either utilitarian or decorative purposes. Numerous efforts both by domestic and foreign manufacturers to develop the trade in handkerchiefs composed chiefly of rayon met with little success until 1937. In that year fairly appreciable quantities of handkerchiefs made in the United States from fabric woven of cuprammonium-process rayon yarns appeared on the market. They were mostly women's printed handkerchiefs used primarily for decorative effect. In subsequent years there has been an increasing production of spun-rayon pocket handkerchiefs for men which compare favorably in style, quality, and utility with handkerchiefs of cotton. United States production of rayon mufflers is believed to be larger than that of rayon handkerchiefs, but data are not available on which to base an estimate as to the relative output of these articles.

PLAIN RAYON HANDKERCHIEFS AND WOVEN MUFFLERS-Continued

In each year since 1930, when they were first separately classified, imports of rayon handkerchiefs and mufflers have been small in both quantity and value and entries have consisted chiefly of hemmed articles. France was the principal supplier during the period 1931-35, but in subsequent years imports from France were negligible.

Plain rayon handkerchiefs and woven mufflers: United States imports for consumption, by kinds, with principal sources, in 1939

Kind	Total value	Principal sources
Not hemmed -----	\$12	United Kingdom, \$12
Hemmed or hemstitched -----	1,576	Japan, \$1,337; Germany, \$107; FRANCE, \$92

Source: Official statistics of the U. S. Department of Commerce.

RAYON WEARING APPAREL, N. S. P. F.

Stat. class (1939): 384.16

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports ^{1/}	Imports for consumption from--				
			All countries	FRANCE	Japan	United Kingdom	Switzer- land
	Quantity (pounds)						
1937	Not avail- able	Not avail- able	57,296	1,789	40,725	972	930
1938			33,430	1,709	26,834	208	159
1939			25,113	2,317	19,081	763	124
1943			1,464	-	-	1,306	-
	Value (dollars)						
1937	Not avail- able ^{2/}	2,615,108	100,148	26,504	38,762	6,288	4,387
1938		3,358,039	55,948	21,741	24,901	2,066	499
1939		4,440,440	49,207	21,613	19,284	3,347	407
1943		4,143,693	10,405	-	-	9,505	-

^{1/} Listed as dresses, skirts, blouses, and other outerwear, not knit or crocheted.^{2/} See text.

Source: Official statistics of the U. S. Department of Commerce.

<u>Item</u>	<u>United States tariff</u>		<u>Proposed negotiating country</u>
	<u>Act of 1930</u>	<u>1945 rate</u>	
Par. 1311 Clothing and articles of wearing apparel of every description, manu- factured wholly or in part, wholly or in chief value of rayon or other synthetic textile, and not specially provided for -----	45¢ lb. + 65% ad val.	45¢ lb. + 65% ad val.	FRANCE

Note.- The specific portion of the duty was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns"). The compound duty on total imports in 1939 was equivalent to 88 percent ad valorem or to \$1.72 a pound.

Comment

Paragraph 1311 covers rayon wearing apparel and accessories, except those items which are specifically provided for in other tariff paragraphs, such as handkerchiefs and woven mufflers, articles knit or crocheted, and articles ornamented with lace or embroidery.

United States production data for wearing apparel have not been broken down by fiber content in recent years, making it difficult to estimate production of articles comparable with those included in the paragraph under consideration. It is known, however, that production of rayon wearing apparel of all types was steadily increasing in the decade preceding World War II. In 1939, the value of the domestic output of rayon clothing probably approximated half a billion dollars.

RAYON WEARING APPAREL, N. S. P. F.-Continued

Imports of rayon wearing apparel are very small in comparison with domestic production. In the years before World War II they consisted chiefly of relatively expensive dresses and other articles from France, and inexpensive apparel from Japan. The high-quality, specialty articles from France were mainly "prestige" goods and were imported for an exclusive clientele. Imports from Japan were at the lowest extremes of value, averaging about \$1 per pound (foreign value).

United States exports of rayon wearing apparel, which consist predominantly of dresses, are greatly in excess of imports. The Union of South Africa, the United Kingdom, and Canada have been the most important markets.

MANUFACTURES OF RAYON, N.S.P.F.

Stat. import class (1939): 386.49

United States production, exports, and imports, 1937-39 and 1943

Year	Production	Domestic exports	Imports for consumption from--			
			All countries	FRANCE	Japan	United Kingdom
Quantity (pounds)						
1937 ---	Not avail- able	Not avail- able	32,553	3,326	24,054	427
1938 ---			23,199	2,084	17,660	859
1939 ---			18,807	4,337	9,776	3,608
1943 ---			<u>1</u> / 1,211	-	4	606
Value (dollars)						
1937 ---	Not avail- able	Not avail- able	36,881	7,393	18,639	1,260
1938 ---			23,521	5,497	11,426	2,010
1939 ---			24,306	8,985	7,478	6,206
1943 ---			<u>1</u> / 2,560	-	6	1,215

1/ Canada and China were the second and third sources with negligible imports.
Source: Official statistics of the U. S. Department of Commerce.

Item	United States tariff		Proposed negotiating country
	Act of 1930	1945 rate	

Par. 1312

Manufactures * * * of rayon * * *,
n.s.p.f. -----

45¢ lb. + 45¢ lb. +
65% ad val. 65% ad val.

FRANCE

Note.- The specific portion of the duty was intended as compensatory for the duty on rayon yarn. (For discussion of this see note at end of the digest on "Rayon filament yarns"). The compound duty on total imports in 1939 was equivalent to 100 percent ad valorem or to \$1.29 a pound.

Comment

Imports under this paragraph include for the most part household articles such as rayon damask table cloths and napkin sets, bedspreads, couch covers, draperies, panels, mats, and table runners. In addition, imports under this paragraph have included novelties and miscellaneous fancy articles such as purses, handbags, hat linings, egg warmers, teapot holders, shoe trees, coat hangers, lamp shades, pin cushions, ball snappers, and cloth card and comb cases.

Imports, which were not separately reported before the Tariff Act of 1930, reached their maximum of 39,000 pounds, valued at \$74,000, in 1936. Because of the extensive range of articles dutiable under this paragraph, imports of individual items are negligible and constitute a very minute proportion of the domestic production of comparable articles. Analysis of data obtained from import invoices shows a large percentage of items incorrectly coded under this paragraph and subsequently transferred to other tariff paragraphs for duty purposes. Thus the actual imports under the paragraph are smaller than the above statistics indicate.

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